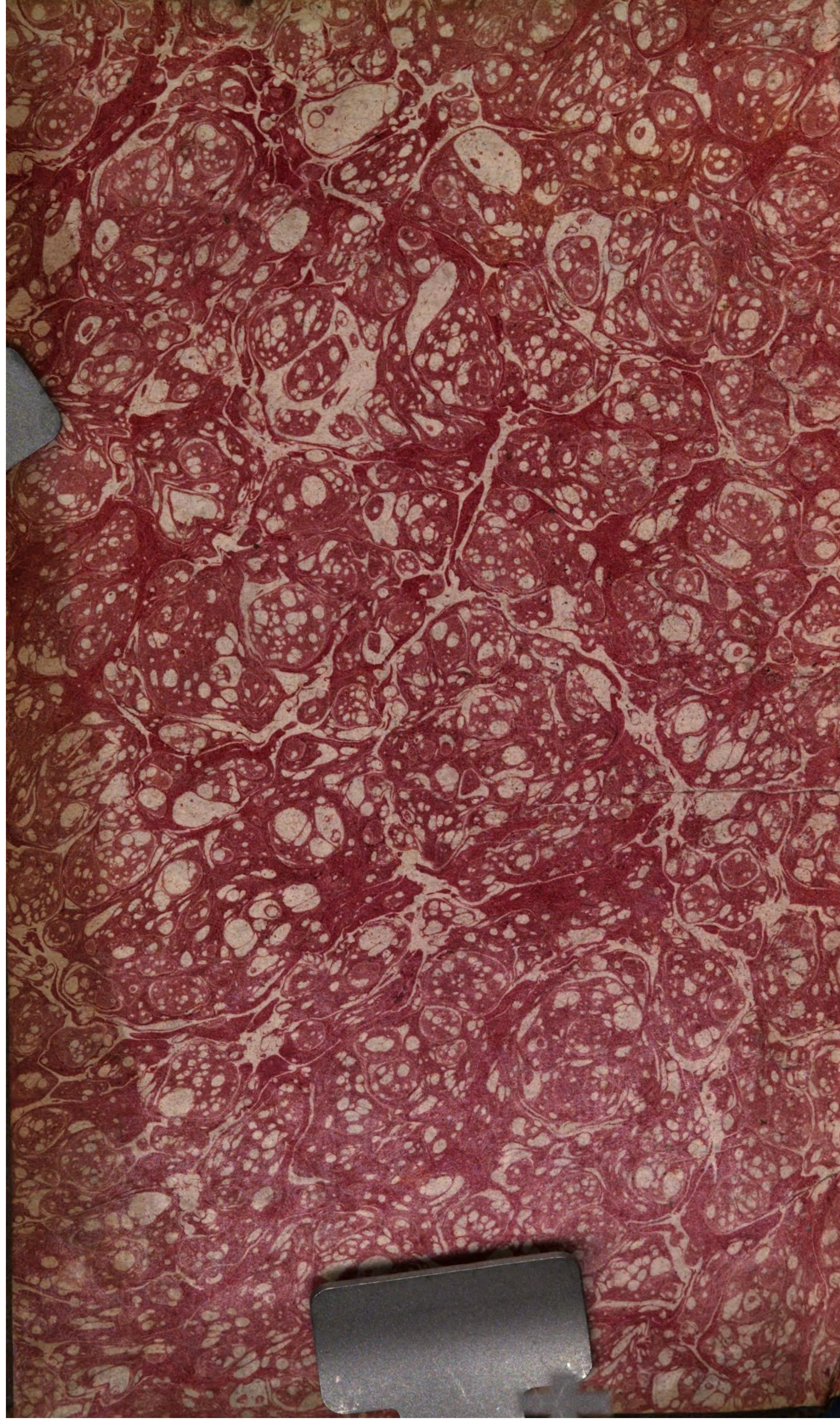








PR 3672.

Oec. 541.

Oeconomia. Scripta de oeconomia
singular. regionum. p. 75.

~~Oec. gen. N^o 175.~~

R

T H E
Practical Farmer:

O R, T H E
Hertfordshire Husbandman:

Containing many New

IMPROVEMENTS in HUSBANDRY.

- | | |
|---|--|
| <p>I. Of MELIORATING the different SOILS, and all other Branches of Business relating to a FARM.</p> <p>II. Of the NATURE of the several Sorts of WHEAT, and the SOIL proper for each.</p> <p>III. Of the great Improvement of BARLEY, by BRINEING the SEED, after an entire new Method, and without Expence.</p> <p>IV. Of increasing Crops of PEAS and BEANS by HORSE-HOUGH-ING.</p> <p>V. Of TREFOIL, CLOVER, LUCERNE, and other Foreign Grasses.</p> <p>VI. A new Method to IMPROVE LAND at a small Expence, with BURNT CLAY.</p> <p>VII. Of the Management of COWS, SHEEP, SUCKLING of</p> | <p>CALVES, LAMBS, &c. with Means to prevent, and Remedies to cure ROTTENNESS in Sheep.</p> <p>VIII. How to keep PIGEONS and TAME RABBITS to Advantage.</p> <p>IX. A new Method of PLANTING and IMPROVING FRUIT TREES in <i>Ploughed Fields</i>.</p> <p>X. Of the various Manures and DUNGS proper for every SOIL.</p> <p>XI. Of the Usefulness, Culture, Method of Raising, Drying and the Virtues of HOPS.</p> <p>XII. Of FOREIGN WHEATS.</p> <p>XIII. A COMPARISON of different METHODS of FARMING in several Countries.</p> |
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By *WILLIAM ELLIS*,

Of Little Gaddesden, in Hertfordshire.

In TWO PARTS.

The Fifth Edition.

L O N D O N.

Printed for T. ASTLEY; and Sold by R. BALDWIN, at the *Rose*, in
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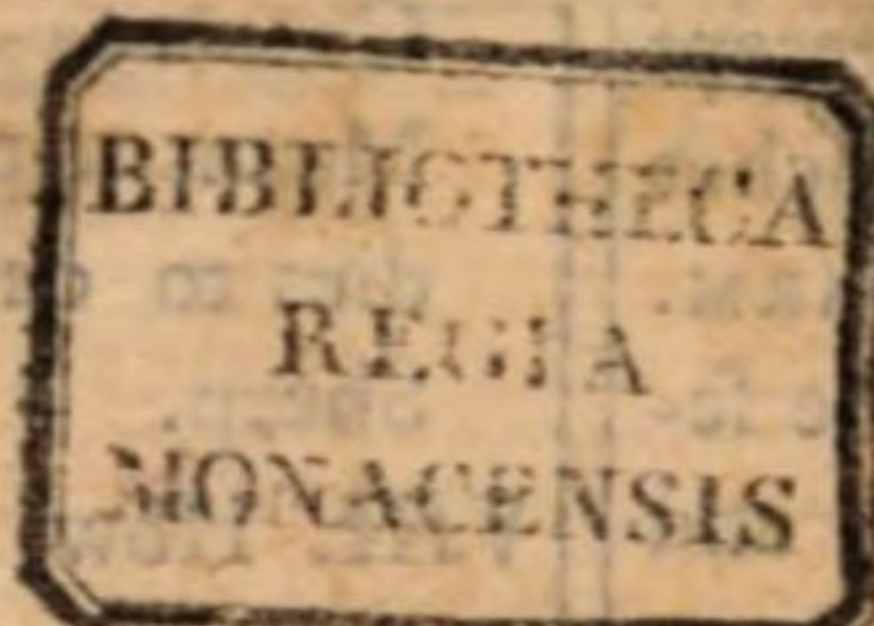
THE Agricultural Almanac:

OR THE
 Horticultural Repository:

Containing many New

IMPROVEMENTS IN HUSBANDRY.

I. COMMUNICATIONS FROM THE
 Society, and all other
 of Public Interest
 N. OF THE NATURE OF
 and Soil of Wheat
 the Soil proper for each
 Of the great Improvement
 of Barley, by Breeding the
 and, after an entire new Me-
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 and Beans by Horse Manure
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By WILLIAM ELLIS,

Of Little Gidding, in Northamptonshire.

IN TWO PARTS.

THE FIRST PART.

LONDON.

Printed for T. Astley; and sold by R. Baldwin, at the Sign, in
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PREFACE.

AS no Profession is more useful in the World, than this of Agriculture; so does it require the greatest Care, Study and Pains to manage its many depending Branches, so as to make them answer successful Ends. For this Purpose several elaborate Tracts have been writ, to forward Improvements in this boundless Science; which have brought about and effected such beneficial Alterations in Farming, as to cause both Landlord and Tenant to rejoice in their Plentiful Productions.

In the further Pursuance of which, I have here humbly thrown my Mite into the Publick Treasury: And, for the Sake of my good Intention for the common Weal, I hope the Generous will excuse the Deficiencies that may have accompany'd my Rustick Pen; which hereafter I shall silence or employ in further Enlargements of this Kind, as the following TREATISE shall more or less meet with Encouragement from the Publick.



E X P L A-



EXPLANATION of some Words in the following BOOK.

A *SPECT*, is such a Position or Bearing of the Side of a Wall, Barn, House, or Garden, to the *South, East, North, or West*.

Back boughting, is done by drawing the Plough once forward and backward, thorough that which has been boughted.

Baulks of Grass, or those which some call Hedge-Greens; they lie next to the Hedges in ploughed Fields, and serve to turn the Plough-Horses on.

Boughting, is made by two Thoroughs, that the Plough by going backward and forward, throws up against each other.

Broad-Land Ploughing, is just turning an even Piece of Ground topsy-turvey, and is the neatest, cleanest Ploughing of any other.

Combing, or Hacking of Land, is made by the Plough's being drawn forward and backward closer than Boughting in smaller Thoroughs, and tho' a little sharp Ridge, or Sleeving be left, yet in a Manure, this is neat clean Ploughing.

Four-thoroughing of Land, is not clean Ploughing, but running up four Thoroughs close together with the Plough; is best done off Wheat-

6 *Explanation of particular Words.*

Stubble Stitches in the Winter, to sweeten for Peas or other Grain: Or Broad Lands may be ploughed into four Thoroughs; a good Method.

Horse-Houghing, is so called by Reason it saves Man's Houghing, not that a Hough is used by Horses, but their drawing a Plough in a particular Manner supplies the Use of a Hough.

Hove in Cheese, is a Hollowness with Eyes caused by being made from Clover.

The Hoving of a Cow, is otherwise a Swelling caused by the Wind, in Clover or Lucern Grass.

Kerning Ground, is that which, drest well, will produce a great Quantity of Corn, as Gravel does, when others will run more into Straw and less Corn.

Loamy Ground, is that betwixt Sand and Clay, of a Hazel Colour, and is of all others the best Sort.

Nitrous Dews, are Salts in the Dews, which are beneficial to all Roots they come at.

Smutty Wheat, is that which is discovered by its black Ear, and may be seen in standing Corn, from that which is found. Upon rubbing it on the Palm of the Hand, it will leave a black Powder like Soot.

Tilth, or *Tilt*, is Ground reduced by the Plough and Harrow to a Fineness or Powder.

Thoroughing down, is drawing the Plough once thorough the Bought, to lay it plain for Wheat or Barley.



THE
Practical Farmer:

OR, THE
Hertfordshire Husbandman.

PART I.

Of the MELIORATION *of* SOILS.



MELIORATION of Soils may be otherwise called an Alteration of Earths or Improvement of them, by mixing their several Sorts of Bodies with Dungs, Chalks, Lime, Sand, &c. or else by manuring them with

8 *The Practical Farmer : or,*

Hand-dressings ; as with Soot, Ashes, Horn-shavings, Coney-clippings, and Rags, at proper Seasons ; or else by the several Sorts of sowed Grasses, which gives the Earth an Opportunity of enjoying a Rest, a longer or shorter Time, as the Owner thinks fit ; but the longer it lies under such Rest, the more mellow it becomes, by obtaining in that Time, a certain Crust or Grass-Clover, which prevents the Ground being exhausted by the Sun's attracting Heat and Power, or by carrying off the Stover. For when these foreign Grasses are fed by Cattle, there is a Dung and Stale returned and left behind, whose Quintessence or Virtue gets into the Ground, which so mellows and enriches it, with their saline, nitrous and sulphureous Qualities, as to cause a very great Improvement to the Land. And therefore it is, that Lands are capacitated to produce the great succeeding Crops of Corn that we annually perceive : So by Dung, that we plough in, which, like Yest in Dough, hollows and ferments the Earth in small or greater Degree with its saline and warm Particles, that will in one Sort of Soil last a great deal longer than in others ; as in Clays, two or three Years, when in Gravels hardly a Year. And therefore it is certainly judicious Husbandry to adapt each Dressing to its proper Soil ; also by Chalks which is so great a Mellowers of Land, that the Effect thereof will remain in some
Ground

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Ground twenty Years after: And this is more efficacious, as it is better or worse. Therefore it is of considerable Importance what Sort of Chalk is made use of; for above all others, the fat Chalk is as much to be sought after, as the lean stony Chalk is to be rejected; wherefore several Farmers are sometimes obliged to try more than one Place in their Field to search for the best Sort; for there are in the Earth, and I have known it even in one Field, that a hard and soft Chalk has been found, which has obliged the Owners to cut thro' a hard, stony, rocky Sort, before they could come at the right fat Sort.

By Lime and Sand are Clays vastly altered, and their tough Bodies reduced both by the Chalk, and these into a delicate Mediocrity of Earth, that is capable of far greater Improvements afterwards than before; for as the Clay is tough and sour, the Chalk, Lime and Sands shorten and sweeten its Body; and so the Clay is no less beneficial to the Sand by the reverse Nature of each other's Body. This is true Melioration, and indeed it is pity more of this Sort of Husbandry is not practised; if it was, greater Quantities of Grain and Grass might be had, than we now generally have. Some indeed I have known of the better Sort of Husbards, that have sent their Carts several Miles for this valuable Dressing, when others that are more ignorant and slothful, will not fetch it
tho'

tho' it is to be had even in the very Field where it is most wanted. Lime also is a most potent Mellower and improver of cold, steril Earths, and especially those Sorts that are of the cold and wet Nature; because this Sort of Manure is full of fiery and alkalous Salts, which so warm the Parts of any cold Soil, that it will cause the Grain which is sowed therein to flourish and look with a dark Green in a cold wet Spring, when others yellow and die thro' the Extremity of Wet and Cold.

Horn-shavings, Hoofs, Coney-clippings and Rags are all great Mellowers of Earths, by warming and hollowing their Parts in the frosty or watry Seasons, and oftentimes prevent the Ruin of whole Crops of Grain that are sown in the Earths where these are mixed. They who live within ten or twenty Miles of *London*, have certainly a great Opportunity of buying Rabbits and Fowls Dung, which I am sure are very great Succours to cold spewy Grounds, be they either Arable or Meadow. And I could not but regret to see such Quantities thrown away there, that would be worth at least Six-pence the Bushel *.

The Melioration of Soils by Mixtures of Dungs, Hand Manures, artificial Grasses, &c. certainly ought to be our chief and greatest Cares, because as the Earth is the Foundation or Production of all Crops, and

* See farther Mr. Switzer's Method of Improving Land by burnt Clay, &c.

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and Increase of Grain, Fruit, Wood, Cattle, &c. if this is neglected, all Things that are sown, planted, or grow in the same, will complain, and Nature itself will be a Witness of the ill Husbandry of its Occupier. This was more than ordinary evident to me, when I saw an Acre of Ground of my Neighbour's produce only four Bushels of Wheat, and another that return'd forty Bushels; and I am sure the former was the better Land, because it was a deep Hazle Loam, and the latter a Hurlucky-chalk. The first was inclos'd and rented at 14 s. *per* Acre, the other open-field Land, at about half the Money, a great Difference indeed, and that by mere Dint of Husbandry, for the inclos'd Field was but half dress'd, and that only with light Cart-dung, that was ploughed in, and then sown with Wheat on a Fallow of four Tilth, after a Crop of Peas, when the other had regular Ploughings all the Summer, brought into a fine sweet Tilth, was well folded, and had about fifteen Loads of short Horse-dung ploughed into, and thoroughly mixed with the Earth; by all which it may plainly appear, how one Farmer may be ruined, while another gets an Estate; for there is the very same Rent, Taxes, Tythes (if paid for) Ploughing, Reaping, &c. of a bad managed Acre of Ground, as there is for one ever so well husbanded: So that it is egregious Folly to undertake Farming unless a Person has both Money and Skill, and
there

there be a due Application of both. Another lively Instance of this appeared in the Conduct of one of my Acquaintance, that rented about 100*l.* a Year, who having only 100*l.* besides his Stock, laid most of it out in meliorating his Land with Chalk and other Dressings, and tho' it is near twenty Years ago, such a Beginning proved a Foundation of most of his After-success, and the Man can now call himself a Man of Substance ; when the slothful, negligent Farmer (who had, in my Opinion, as good an Opportunity as the other) is at this Time reduced to great Indigence.

The shifting or changing of Crops yearly is an experienced Improvement towards meliorating of our Earths ; for as several Species or Roots have their Suction from the Ground in different Manners, they each Time cause an Alteration in the Nature of the Land, and thereby make it a more proper Receptacle for the next Change of Grain or Grass : But this Usage cannot be continued in Clays or Loams, so long as in Gravels, Chalks, or Sands, because a Clay or Loam by this Means will in Time become heavy Clung and Som, and then its in vain to sow any more till it is got sweet again ; and if they are sowed constantly too long, such Earth will be overtaken with the wild Oat. But Gravels, Chalks, and Sands, will hold sowing ten Years together, provided they be
got

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got to a Tilth, dress'd well, and the Seed chang'd every Year: Yet even these by length of Time and constant Sowings, will be apt to breed the wild Oat or other Trumpery, as it happened to be my Lot to prove, when, at *Leighton-Buzzard*, in *Bedfordshire*, I bought some Barley that came off a sandy Soil at *Solebury*, where they sow their Ground every Year, but the Barley was stained with the wild Oat; however, I could get no better there, the Change being right from a Sand to a Loam; and indeed such Alterations of Seed have now very much supplanted the Use of Chalk and Lime, that would very potently open the Pores of the Earth, and sweeten it to such a Degree, as, with the Help of the Plough, would meliorate it for twenty Years together: Instead of which, a Crop of well houghed Turnips, a full Crop of Beans, or a houghed Crop of Peas, &c. will answer in a great Measure.

W H E A T.

OLD red Lammas has a red Straw, and a red Ear: This is reckoned the best of Wheat, because it makes the finest Flour. It answers better in the Vale and on rich Lands, as in *Bucks*, *Northamptonshire*, &c. than in the Chiltern or high dry Grounds; because it will be larger body'd, and commonly

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monly exceed all others in Bigness when sown in the best Grounds.

Yellow Lammas has a red Ear and white Straw, and is reckoned the second best.

Pirky Wheat is the most convenient for our chiltern Lands, and will prosper, either in our stiff or gravelly Ground, sells almost as well as Lammas, and is more hardy: This Wheat is the thinnest skin'd of any, and is best sold in Winter, because it will part with its Flour easier than any other; and therefore the Wheat Buyers had rather buy the Lammas in Summer; for that it is thicker skin'd, and holds its Flour tougher, which in some Measure is cured by lying all Winter in the Mow. This Wheat when sown on gravelly Ground, often obtains such a Colour, that it is hard to know it from Lammas, and frequently deceives the Buyer; it yields best in Ear, but won't return so much, nor so good Flour as Lammas. It is not so subject to Mildew as the two former, and is now more and more sowed, for its returning above one Bushel upon five more than the Lammas, and will prosper on our gravelly and whitish Grounds when the other fails.

Dugdale Wheat has a four-square Ear, is a hardy Wheat, will grow on four Tith the best of any; and therefore, some say, its best to sow on a Clover-Lay: But the Wheat-buyers don't care to deal in it, unless in a dear Time

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Time, because it makes harsh Flour; so that it generally sells for 2 s. in five Bushels cheaper than others, and is mostly used by the Country Bakers. This Wheat, by its long Beard, receives the Mildews, and so escapes that Damage which others are subject to; its Fibres keeping the Grain unhurt.

These four Sorts are what they chiefly sow in *Hertfordshire*, where they run upon this Grain, as being a County best furnished of any others, with Water-Mills for grinding the same.

Wheat is the properest Grain to follow Clover of any, because it will best bear with four Tith; and now its become almost a general Practice here to harrow Wheat upon only one ploughing up of Clover, thus: Plough up one Land at a Time, sow that, and fold it; then plough up another, and do the like, and so on till the Field is done, the larger the Fold the better, for the Field will be sooner finish'd; and by that Means the Sheep will be gone from thence, before the Wheat is much up. This Dressing with the Fold has several Conveniences; it not only enriches the Land, but treads the Grain in, and so preserves it from dying, and makes it stand fast against the Winds. Now as to the proper Time of sowing in this Manner, some do it from the Beginning of *August*, to the End of *October*, according to the Nature of the Land, on Clays and wet Grounds first;

first; and on Gravels, Chalk, and on dry Grounds later. Those that have a great deal to do, ought to begin early, because this Method is something tedious; and the Quantity on broad Lands should always be more than on Stitches, because on them the Grain is more covered, when the other is more exposed to the Beak and Feet of Fowls; so that it is generally adjusted to three Bushels an Acre on broad Lands, and two Bushels and an half on Stitches. Others again dress with rotten Dung, by putting on about fifteen or twenty Load upon an Acre, immediately after the Wheat is sown and harrowed in; and I take this to be much preferable to the dunging about *Candlemas*, for this Reason: The Blade will make its Way thro' the Dung, if it be but tolerably spread before it spires; whereas by laying it on in the Spring the Blade is crushed down, and so by the Heat of the Dung becomes yellow and dies. Others again will foot it quickly after sowing, and some about *Candlemas*: The first, because it helps to destroy the Worm, which often gnaws the Root of the Wheat, even to the almost Destruction of a Crop; and this red small Worm is apt to be more than ordinary in the Ground after sow'd Grasses, and most in that after *Ray* Grass, *St. Foine*, and least after *Clover*; and that white Ground, Gravels, and light, are most subject to it. About *Berkhamstead*, some dare not sow Wheat on Ground

Ground that has laid down two Years with Clover, for fear of the Worm, and therefore instead of Wheat, sow Oats; and they sometimes are spoiled by the Worm in the Gravels, and gravelly Loams; but wet Grounds are not so subject to them. Sooting Wheat about *Candlemas* has been an ancient Practice; because, by that Time, it was supposed the Danger of great Snows was mostly over, which otherwise might wash it too hastily from the Roots of the Grain, and so impoverish it the Summer following.

A great Farmer at *Dagnal* lying near *Dunstable-Down*, sowed a thirty-Acre Field with Wheat on one Ploughing, after Clover, and dress'd it with Soot about the Middle of *November*, saying, he believed forward Dressing best, because it killed the Worms before they damaged the Roots of the Wheat: In the next Place, it brought the Wheat under such a great Head, that it would be as good as Half a Crop of Grass, which would be such a Subsistence to his Sheep, that they would return a second Dressing by their Dung; but this Method, he said, he dared not practise on any other Field he had, because this was a clean Ground and did not throw up Weeds like the rest, being a chalky, gravelly Loam. Another old Farmer by him, said, he dared not feed his Wheat down in a cold, wet Soil; for that, if *May* should be cold and wet, the

Weed would get the start of the Wheat, and so spoil the Crop. And this I have known to be true, and fatal to my next Neighbour, who fed down two of his Wheat Fields bare; the one was dress'd by a Fold directly on the Wheat, as soon as sown on a Clover Lay, the other first fed, and then footed: But the Spring 1730, proving cold and wet, and the Ground being of that Nature too, he had but a poor Crop.

Another Way is this: After Clover has been fed near two Summers, give it one Ploughing the Middle of *July*, or the Beginning of *August*; the longer the Clover is when you plough it in, the better; then let it lie about a Fortnight to rot, and, after some Rain has fell, to mellow the Ground, harrow in your Wheat: If the Ground lie even, you need only harrow the Wheat in at once, but if uneven, twice in a Place long-ways, and once a-crofs; and when it is come up, roll it, and not before; because by rolling it too soon, it will fasten the Ground, and hinder some of the Kernels from coming out: Thus rolling Wheat after it is come up, new-moulds it, fastens the Root, and forwards the Growth of the Grain: And about *Harrow on the Hill*, in their pebbly, gravelly Ground, they plough in their second Crop of Clover when it is fit to mow, on which they harrow in their
Wheat,

Wheat, and say they find no Dressing like it. And on Gravels and other poor Soils, they commonly sow thicker than on rich Loams, for this Reason, because the Grain does not gather and branch on poor Land as on rich; so that no more, nor even so much comes up, as what you sow. Likewise in white Grounds they sow three Bushels on an Acre, when brought under a Tith; because, they say, the Wind often, in a dry Time, blows away the Earth from the Roots, and so kills much of the Wheat. Now in case the Clover is eat bare when you plough it up, I take it the best Way to harrow in the Wheat immediately, while the Ground is fresh and hollow, lest the Buck Rains (as the Farmers call them) fall fast and harden the Ground, and so make it more unfit to receive the Seed; but here I would be understood, only where the Clover is so eat or mowed, and not where it is ploughed in. And, it is certain, that Gravel, in particular, has a great Benefit from Clover, especially when laid down two Years; for in that Time it obtains a Crust or Turf, which being turned over to the Bottom, lies and nourishes the Wheat, and will not be devoured by the hungry Gravel like other light Dressings: Then by folding on the same, the Sheep tread and tumble on it, so as to fasten the Earth and hinder the Worm, and by sowing early

the Root enlarges it self, and the Worm has not so much Power to destroy it; then less Seed will do, but later more. And in Gravels, I have heard of Wheat sown at *Lady-Day* on a Tilth, that was as forward as others at Harvest, and a middling Crop. A Farmer also by me, sowed Wheat in Harvest, and about *Michaelmas* following eat it down with Sheep, and folded upon it; this proved a great Crop. Again, the same Person sowed Wheat after Clover, that had been mowed upon one Ploughing only, and it proved a good Crop; and for so doing I have heard this Reason assigned, that when the Clover is fed by Horses, in particular, they will eat the sweet Parts of it, and the other that is sour they meddle not with, but stale and dung on the same; so that when Wheat grows on this Ground, it generally comes in Tussocks and uneven, because some Parts of the Field are dressed as aforesaid, and others not: For indeed the Clover, by standing till it is fit to mow, gets a-head, which attracts and holds the nitrous Dewes that enrich the Ground, cover it, and kill the Weeds; insomuch, that I have often proved it to be the best Cleanser of the Ground and Killer of the Thistle, and many other Weeds, of any known Thing else. And after this Mowing of Clover, your Crop will come even, and the Wheat be all alike, and often produces a good Return; especially

especially if folded, footed, or Cart-dung'd at Top, with the Help of the Clover Roots, which also is a Sort of Dressing. And the next Neighbour to this Man, on a gravelly Soil, mowed his Clover in one Field, and fed another; by this he proved the mowed Field to return the best Crop of Wheat. But another Farmer said, that if a Piece of Clover be fed with large Cattle it will be more hollow than that which is mowed, and therefore better for harrowing in of Wheat on one Ploughing. And this I have experienced on a gravelly Loam, where nine Horses grazed on about four Acres and an Half some Time. The Reason I take to be this; that as the Stale and Dung of a Horse is of a hot, fiery Nature, and the Beast of the largest and heaviest Size; they, by their Weight and Agility, so compress the Earth upon their Stale and Dung, that it causes a Fermentation in the Ground, which, like Yeast in Dough, swells and hollows it, especially where Horses graze to the last.

Another Way is, that of a Farmer at *Penly* that rents three hundred a Year, who a few Years since came out of *Berkshire*; viz. He sows a Field with Peas in Drills, which the Plough makes; and after two several Hoeings, the Ground is pretty well cleared from Weeds. This fits it for the Reception of Wheat the *Michaelmas* following, when he dresses it over with Dung, and either

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sows it on Stitches, or gives it one Ploughing, and harrows in Wheat on broad Land. This Way seldom fails of a good Crop, for Wheat loves to follow Peas; and when they are a good Crop, that not only kills the Weeds, but hollows, meliorates and enriches the Ground by their Roots, and the nitrous Dews that their Haulm peculiarly contracts besides the great Cover it affords the Ground. But Dung either ploughed in before the Wheat is sowed, or spread, or immediately after, or footed, is perfectly necessary.

Another Method is, after three Ploughings, that the Ground is got into a good Tilth. In the Morning a Gentleman, by me, sent to the Kiln for ten Quarters of Stone-Lime in two Carts, and shot each by itself; then immediately three Men fetch'd Water and slack'd it to a Powder; which as soon as done, the Men took each a Pair of Gloves and his Seedcot, and sowed it over the Ground as thin as they could (for it must be sown hot;) this was on about three Acres, which brought the Ground under a Ferment, and about a Week after they sowed the Wheat in Stitches as usual. This is a good Way of manuring on Clays and wet Loams, by Reason of the great Heat of the Lime in Opposition to the cold Ground, and the Plenty of Salts with which it abounds. This also sustains and preserves the Wheat
under

under a good Head in the Spring, when the cold chills of Frost and Rain cut off and spoil others.

Another Way is, what is often done, as follows: A Farmer having a good Crop of Barley on broad Lands, gave it one Ploughing, and harrowed in Wheat, and dressed it with Cart-Dung on the Top, but he sowed it too thick, even above three Bushels on an Acre, and so had but an indifferent Crop, for it was hopper-ear'd; tho' the same Man told me had he sowed less Seed, it would have been a good Crop: This was on a loamy Gravel, and provided it is a dry Time when you plough and sow, this Way may be successful; but the best Way (if you have Time enough) is to give it two Ploughings, and sow the Wheat on Stitches. This Way fastens the Wheat in, whereas Wheat sown on one Ploughing after Barley, is hazardous, because it is apt to stand loose, and so liable to be hurt by Winds; and there is another Inconveniency in this Method; for by running one Crop on the Back of another, it is apt to sour the Ground; which his did, and obliged him to chalk it after the Wheat was off, in order to sweeten and hollow the Land.

There are many Sorts of Wheat both in *England* and foreign Parts; but in the western Part of *Hertfordshire*, there are but two Sorts in general Use, viz. the Lammias and the Pirks. The first, as I have said be-

fore, is the most noble Wheat of all others, for its large Body, fine Flour, and the great Quantity it yields; but then it is not fit to be sowed on any Ground besides rich Clays and Loams, because in such it will return its full Substance in Grain; but in Gravels, Sands, or poor Grounds the Pirks excel, and in either, there may be thirty-five or forty Bushels obtained in an Acre some Years, if it is doubly dress'd with Cart-Dung, Fold, Scot, Horn-havings, Rags, &c. for Gravels, tho' they are naturally poor Soils, yet are they of such a Kerning Nature, that I have known them bear eight Quarters of Barley on an Acre, and so in Proportion of Wheat, and then a Farmer may depend on paying his Rent, and saving of Money; but he that spares Dressing, will be sure to fail, if he expects such Crops.

Besides, when a full Crop of Wheat or any other Grain has grown in the Ground, such Land will be made hollow, and freed of Weeds, which renders it in a true Capacity to bring forward succeeding Crops to great Profit: This answers the old Maxim, *That Riches beget Riches*. For many have found this Truth to answer in their next Crop of Peas or Beans, that love dearly to grow in hollow rich Earths.

The Nature of that fine Wheat, by some called White Lammas, by others White Pirks, makes the whitest of Flour, and is best ground with the Red Lammas, because the latter

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latter is generally full tough, and the other as brittle. The White Pirk is a hardy Wheat, and makes a great Return by its full Ear, and is much esteemed in foreign Parts. It is near alike to the *Sicilian* Wheat, that one of the Royal Society was so good to make me a Present of, that I have now growing.

Brining and Liming of W H E A T,
B A R L E Y, &c.

BRining and Liming of Wheat was first invented for preventing its being smutty in the Ear ; and notwithstanding the following various Opinions and Methods are now amongst the Farmers, they still seem to be at a Loss to account for the true Cause of the Smuttiness of Wheat ; but the best Reason I have heard, is from the next Farmer to me, who has been a considerable one these thirty Years ; he says that it is the damaged, imperfect, light Kernels that produce smutty Ears ; and these, as well as other Trumpery, swim on the Top of the Brine, by stirring the Wheat often about, and so are skimm'd off : And what defective Seeds may chance to escape, I presume the Salt and Lime so destroy the smutty Part of them and invigorate the better Part, as to hinder any Prejudice from them afterwards. And therefore the usual Saying, That if a Man sows smutty

smutty Seed, he'll be sure to have Smut again, I am of Opinion, is not certain. To prove which, the same Farmer happening to buy a smutty Crop of Wheat as it stood on the Ground, ventured to sow the same for the next Year's Crop, and had as sound Wheat at Harvest as ever he had in his Life ; but he observed, that the Seed that produced the smutty Crop, was not brined and skimmed, but that he sowed was.

A Farmer that used to sow about twelve Acres of Ground, bought Half a Bushel of Salt, Part of which he put Water to, till an Egg swam; then the Evening before, he puts the Wheat that was to be sown on the Morrow (about two Bushels and a Peck) into a Tub to the Brine (in which is a Tap and Tap-Wips) and lets it lie an Hour, and skims the Rubbish off, then draws off the Brine, and lets it lie all Night on the Ground in a broad Heap. The next Morning he limes, and sows the Wheat; this he says surely prevents all Smut, when Liming and Staling can't be depended on.

Another makes his Brine not so strong as that above, by the fourth Part, lets his Wheat lie in it all Day, and takes it out at Night, which he spreads on the Ground, and limes it next Morning.

A Farmer told me, that they made the Brine that an Egg would swim, and let Wheat lie in it all Night, and sowed it the
next

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next Morning; but the Wheat almost peeled, and there was hardly any at Harvest. I suppose this Brine was made too strong; for I never understood, that Wheat suffered in this Manner by any other but him; for this is reckoned to be the good, sure, old Way of managing the Seed, by letting it lie all Night in Brine that will just swim an Egg, and the next Morning to sift Lime over it, and sow it. But one informed me, he committed a great Mistake in this Way; for having expended the greatest Part of his Brine, to make it good on a sudden, he threw in some Chamber-lye, which so flea'd and stript the Skin of the Wheat, that it spoil'd the Crop, and he had not above twenty Ears on half an Acre of Land: This Person says, he never knew Brine alone do this.

One also says, that he only puts Urine on the Seed, about enough to just wet it all, then sifts Lime on it, and sows directly; by this he says, he never has smutty Wheat. He says farther, that some have smutty Wheat, by using old powder'd Lime, instead of Stone-Lime; and he is of Opinion, that there is more Security in the Lime than the Stale.

Another Farmer, of about forty Years Experience, has left off Brining and follows this Way as best: He threw five Bushels of Wheat on the Ground, and then run one large Garden-Pot, of black Ditch-Water, and

and as much Urine mixed together, over the same ; then sifted about a Peck of Lime, and mixed it with the Shovel, and sowed it on about two Acres of Clover-Lay, thus : First on the rough Ground as the Plough left it in broad Lands, Half the Seed, which he harrowed once in a Place ; then he sowed the other Half, and harrowed the same Way once in a Place ; then he harrowed it overthwart or across, twice in a Place.

There is a certain Author recommends this : Pour into quick and unslacked Lime, as much Water as sufficeth to make it swim above the Lime, and unto ten Pounds of the said Water poured off, mix one Pound of *Aqua Vitæ* ; and in that Liquor steep or soak Wheat or Corn twenty-four Hours ; which being dried in the Sun, or in the Air, steep again in the said Liquor twenty-four Hours more, and do it likewise a third Time. Afterwards sow them at great Distances one from another, above the Distance of a Foot between each Grain ; so one Grain will produce thirty, forty, and fifty Ears, and those very fruitful, with the Stalk equalling the Stature of a Man in Height.

The next Account is taken out of the *Philosophical Transactions*.

On the 22d of *March* was steep'd,
A Pea, Barley, and Wheat, in *Brimstone*
Water.

The same Kind in *Allom* Water.

Ditto

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Ditto in old Dissolution of *Sal Tar.*

Ditto in *Cap. Mort.* of *Sal Armo.* dissolved in Urine.

Ditto in the Dissolution of Salt of Walls.

The same in the Dissolution of *Nitre.*

Ditto in Urine.

After the steeping them five Days or Nights, he set them on a good Garden Soil, against a Wall, full exposed to the Sun, on the 27th of the same Month, after a rainy Night, with a Pea, Wheat, Barley, and Oat unsteep'd.

On the 10th of *April*, the Pea, Barley, and Wheat steep'd in the *Brimstone* Water, all were up together.

The Pea in *Allom* Water swell'd, but did not sprout; but the others steep'd in the same were above Ground.

The Pea in *Solut.* of *Sal Tart.* half came up; the Wheat scarce sprouted, but the Barley and Oat quite up.

The Grains steep'd in *Cap. Mort.* of *Sal Armoniac* dissolved in Urine, were all up together; as also the others that were steeped in Solution of Salt of Walls. The Pea and Wheat in the Dissolution of *Nitre* were about half up, the Barley and Oat quite up.

The Barley and Oat steeped in Urine. were come up, but the Pea and Wheat scarce sprouted.

From whence the Gentleman that first made the Trial, who was *Monf. de la Prime*, observes

observes that *Allom* Water is not agreeable to the Nature of Peas, and retards their Growth; because the Pea unsteep'd was up as soon as any of the other Grains: And that Salt of *Tartar* is not friendly to Peas or Wheat, but is concordant to the Nature of Oats and Barley. He further observes, that the Wheat, Barley and Oat unsteep'd, were up as soon as any of the Rest; so that he concludes, such Brines as he used, rather retarded some of the Grains steep'd in them, in point of Quickness of Growth, than brought them forward: But then he remarks, that three Spires of the Barley which he left to grow, at a Foot or two Feet Distance, increased so exceedingly, that one had 60, another 65, and the other 67 Stalks a-piece from their single Grain or Root, with every one an Ear on, and about 40 or more Grains a piece on them.

Digby mentions a Plant of Barley, that by keeping first the Grain in Salt-Petre, dissolved in Water and keeping the Plant watered with the same Kind of Mixture, brought forth 249 Stalks, and above 18,000 Grains.

*A prepared Liquor to steep BARLEY, &c.
for SOWING.*

TAKE a Quantity of the Grain you are to sow, a Bushel, more or less, and boil it in a Copper (to a Bushel put five Pails-full of

of Water) till the Grain bursts, and the Water thereby becomes impregnated with the essential Salt of such Grain; strain your Liquor, and give the Corn to the Poultry, that there may be no Waste. While the Liquor is hot, put three Pounds of *Nitre*, that it may dissolve, and add four or five Pails-full of Water which drains from the Dunghill, or Urine of any Sort. And in this prepared Liquor steep the Grain about twenty-four Hours. Let the Liquor be four Inches above the Corn in the Fat, because the Corn will swell and imbibe it. Then take the Grain, and let it dry in the Shade, or sift Lime over it, which will dry it sooner and sow one third less than usual, and you will assuredly find the Benefit by twenty-fold; I have actually tried it with Barley and had commonly thirty Ears from one Root. The Liquor that is left, will serve again with fresh Addition, or is admirable to water a Garden. About three Pounds of *Nitre*, as above, is sufficient for as much as will sow an Acre or more; and what is left is still the stronger by being the Ground-work of the next Addition of *Nitre*. You must pour your prepared Liquor warm upon the Corn, and stop all as close as you can, for that causes the Salts to be put in Motion. Imbibe the Corn one Evening, and take it out to dry the next; and by Morning it will be fit to sow; and at the same Time you may

may prepare more Corn for the next Day, and so on till the Season is over.

The Excellency of this Receipt is obvious in several Cases. 1. It saves Seed. 2. It in some Measure supplies the Defect of full dressing the Land, by the Seed being full of Riches when sown. 3. It produces a greater Quantity than ordinary. Lastly, by this Steeping the Grain will make its Way out of the Ground, if Drought should succeed; whereas that sown dry, and especially that which lies nearest the Surface, will continue sometimes till *Midsummer*, in a dry Summer, before it grows, and thereby often occasions the Loss of great Part of the Crop; for when one Part is ripe, the other is green, at Harvest, which was the Case almost all over the Nation, one dry Summer, when I was so fortunate as to sow, for the first Time, the Barley after this Receipt, which brought my Crop up more even than my Neighbours to the Admiration of the Beholder, and I had more on an Acre than ever I had; I believe I may say as much again.

A great Farmer by me urines his Wheat but once in three Years; alledging, that as he always sows his own Seed, he thinks it sufficient often to retrieve it from any Degeneracy that may accrue to it, by sowing it naked and unbrined two Years together.

BARLEY.

B A R L E Y.

THIS Grain is much sown in *Hertfordshire* and chiefly about *Baldock*, *Hitchin*, *Royston* and *Ware*, by Reason of the great Conveniency of Water-Carriage from the latter to *London*; and also for the Swell which the Water causes in the Measure. There are but two Sorts generally sown here, that is, the common Barley, and the rath-ripe Barley, which latter commonly is ripe with the Wheat and equally good with the other; and most of our curious Farmers hereabouts send their Waggon to *Fulham*, to buy the same every third Year, it declining its Virtue after twice sowing.

Barley is a grain that delights in a fine Tilth and a rich Soil, and will do as well with three Bushels on an Acre, on such Ground, as four Bushels on a rough and sour Soil. With this Grain many People sow Clover, which generally gets a-head, and keeps down the Barley, even to the Loss of sometimes half a Crop, especially in a wet Season. Now the safest Way, that I have experienced, is to sow Clover and Barley about a Fortnight or three Weeks after, and roll it in about twelve or sixteen Pounds to an Acre, according as the Ground is more or less in Heart, and of a Nature for it; for by this Means some Part of the severe

C

Weather

Weather is past, and the Clover somewhat sheltered from the Frost and Sun. At *Dag-nal* a Man that has but one Acre of Land, has sown it seven Years together, and never less than five Quarters and an Half of Barley grew on the same. Another that folded on his Turnips, had nine Quarters on five Roods of gravelly, loamy Ground.

To make Ground ready for Barley after Wheat, I ploughed the Wheat-Stitch into four-thoroughed Lands, presently after Harvest; let it lie all Winter, and in *January* bouted it up: In *March* I bouted it down again, and harrowed it, then ploughed into broad Lands, and sowed my Barley; this was on a wet Loam, and it proved a Tith as fine as a Garden, being a dry *March*.

Again, to sow Barley after Turnips, the Way that is practised here is to run a Row of Hurdles cross a Field, the Out-side of which may feed as many Sheep as fat as your Judgment will allow of; then every Night fold as many of your Store-Sheep on the Turnips, pecked up, as they will eat by Morning: This continue till the Field is finished; then give it one Ploughing, and harrow in your Barley. By this Method vast Crops have been obtained.

Some give the Ground two Ploughings, after the Turnips are eaten off, as believing it best: In this Case the first should be as shallow as possible, and the second a little deeper

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deeper, which turns up again the Sheeps Dung for the Barley to root in. But there often happens a great Misfortune by sowing Turnips too early, in consequence of which they soon become old; and this obliges the Farmer to eat them off betimes in the Winter; for by the Length of Time between that and Sowing, and the frequent Rains together, much of the Quintessence of the Sheeps Dung is lost, and so deceives the Owner's Expectation; so that the best Cure for this latter Misfortune, is to plough the Ground as shallow as may be, as soon as the Turnips are eaten off, and the second when you sow as abovesaid.

A Farmer that sowed his white Ground with Barley, the latter End of *January*, had the best Crop in the Neighbourhood, for that he enjoyed the Rains, when theirs were overtaken with a dry Summer, and Mist. Another sowed his Barley on a Gravel, and lost, he believed 60 *l.* by being too late with his Seed, and so missed the Rains, and thereby his Crop. A good Time in this County is reckoned the Beginning of *March*.

Barley, by some, is sowed to the Quantity of five Bushels on an Acre; and, as I heard one say, it ought to be so thick, that only an Awl could just be put between: For this is not like Wheat, which has a long Time to gather; but both this and Oats being sown on the Edge of warm Weather, must

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have Head enough to shelter its Root from the too powerful Influence of the Sun, or else suffer by Heat and Drought : Which plainly shows the Excellency of this new Method of steeping Barley, that causes it to get a-head in a little Time, and powerfully helps it forward even in the most dry Weather : And in a cold wet Time, in the Spring, this Way is most serviceable, because the saline Particles of the Ingredients being of a warm Nature, enable it much better to withstand those Severities.

Some there are that roll their Barley when they sow it; but that is wrong, for by rolling it after it is up, it is new earthed, and grows the faster : Altho' too late Rolling is justly condemned ; because it is apt to break the Blade, when it is too long.

After a Crop of Barley was got off, the Ground (which a little before had been an Orchard) was ploughed up, and Turnips sowed thereon ; which proved an extraordinary good Crop. Others have sown Beans amongst their Barley in order to keep them up, in Case it should be too rank, but this has its Inconveniency ; for the Beans are seldom so ripe and dry as the Barley when it is mowed, therefore is apt to damp it ; so that it must be longer in the Mow before it is thrashed.

Barley is commonly up in a Week after it is sown, and it is a late Practice about us
to

to carry it to the Mill, and have it just broke for our Plough-Horses: And it is the Opinion of several that have tried it as well as myself, that it is more hearty than Oats. Their Price of grinding at the Water-Mill, at *Great-Barkbampstead*, is 3d. per Bushel, and take no Toll. The Conveniency of this, is when Barley is about 14 s. per Quarter.

Amongst the several Methods that I have practised in dressing of Barley-Ground, I do not approve of laying long Litter, or Dung, on the Top of new-sown Barley, on no Sort of Ground; for that if dry Weather succeeds, then it lies, heats, and parches the Roots; and if wet, it has not Time to wash in and rot, because it lies not a great while; and when the Barley is draft-raked, Part of the Dung rakes up with it: So that I conclude it is best ploughed in with Barley, and there between the Mould, it will retain the Wet, and rot quickly. But I do not disallow it on Wheat, for there its right, by Reason it has a longer Time to rot and wash in, and then there is no Occasion for the Rake.

Also Pigeons-Dung, Hens-Dung, and Rabbits-Dung, are harrowed in with the Barley, because it has been proved to be much better than Sowing, and leaves them on the Top of the Ground, where they will remain if dry Weather succeed; whereas, by incorporating them with the Earth and Seed, the latter has a more immediate Benefit of their Salts.

This Grain, in all Probability, is likely to become more plenty and cheaper than ever, by Reason of the great Increase that the famous Receipt beforementioned, will be the Cause of, if used according to my Directions. It will certainly be found to be the best Augmenter of Barley-Crops of any of this Kind ever invented, and a happy Discovery it will be found in Time, not only for the great Use it affords of making brew'd and distill'd Liquors; but the extraordinary Opportunity it gives the Farmer of feeding his Horses, and fattening his Hogs, &c. when first broken by the Mill; and therefore I would advise the sowing of Barley as often as there is Room for it, and then the Ground, which (when sow'd with this Grain) commonly lies in broad Lands, will be ready on one Ploughing to bear a good Crop of Beans, Peas, &c. and after the Peas or Beans (if they are a full Crop) a Crop of Wheat may succeed before the Ground is fallowed; and for this Reason many in the Chiltern Country give their Land a Fallow after three Crops, whereas formerly they used to do it after two.

It is poor Farming when a Farmer accounts three or four Quarters of Barley on an Acre, a good Crop, after his great Charge and Trouble of Ploughings and Dressings, as I have known it often happen in our Chiltern Grounds; but how insipidly obstinate are those

those Men that thus go on, when they may as well have seven Quarters on an Acre, and that for not a Half-penny Charge, as I know of, more than the old Way, because the Bushel of Barley sowed in the Seed, balances the Charge of the Nitre, as I have already wrote of. However, I am in Hopes the Eyes of their Understanding will be opened in Time, and if Reason wont convince them, the Examples of their more discerning Neighbours will, and provoke them to the frequent Use of this my invaluable Receipt.

O A T S.

OATS are a very profitable and necessary Grain in most Parts of *England*; they are the principal Grain Horses affect, and commended for that Use above any other, being of an opening Nature, and sweet; other Grains being apt to stop, which is injurious to labouring and travelling Horses; although on the other Hand, Oats newly housed and threshed before they have sweated in the Mow, or be otherwise thoroughly dried, are too laxative. On such Lands, as by Reason of the Cold, no other Grain will thrive, yet Oats will grow plentifully; as many Places in *Wales* and *Derbyshire* can witness. There is no Ground too rich, nor too poor, too hot, nor too cold for them;

them : They speed better than other Grain in a wet Harvest, the Straw and Husks being of so dry a Nature, that although they are housed wet, yet will they not heat in the Mow, nor become mouldy, as other Grains usually do ; but they are such a Pealer of the Ground, that I have heard a Gentleman say, who owned a fine Estate in *Bucks*, that he would never suffer an Oat to grow on his Ground, for that very Reason ; and of the two, the white Oat is the greater Impoverisher. The best Season for ploughing of Wheat stubble up, or other Ground for them, is in *January* ; and for sowing and harrowing them on the same broad Lands, is in *February* and *March*. The white Oat is the best and heaviest Grain, and has this good Property belonging to it, that in Case your Pea, Bean, or Barley-Crop should miss, then this Sort of Oat will often do very well, though sown in *April* or *May*. And for this Reason I have known this Sort of Oat kept by way of Reserve, in order to sow after the beforementioned, if they should fail. Again, this white Oat is preferable to the other, on account of its large and more spreading Blades, with which they cover and shelter their Roots, and the Ground about them, so that Clover sown amongst these, has much the better Chance of taking the Ground, and becoming a good Crop. The Meal of them makes good Bread, and is much used for
that

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that Purpose in many Places, and also good Pottage, and several other Messes, and is in great Request towards *Scotland* and *Wales*. Oaten Malt also makes good Beer. But the black Oat makes the best Oatmeal.

I am informed there are a Sort of Oat growing like unto whole Oat-meal, and is in great Request about *Durham*, where they have been yearly sown above these fifty Years; after they are sown, they come up like Oats but with a smaller Blade; when they are ripe upon the Ground, they are like Oats, and not easily distinguishable from them; the greatest Difference between them being, that in the Threshing, these came out of the Husks clean, like unto *Dantzick* Rye, which this very much resembles both in Shape and Bigness; and need not be carried to the Mill, as other Oats, to be made into Oat-meal or Grouts. The Taste of them is more sweet and fleshy than Grouts made of common Oats. They are most naturally boiled as Rice in Milk. An Acre doth not yield so many Bushels of these, as of common Oats, by Reason the Grain is small and naked, and so near in Measure, that what is wanting in Measure, is supplied in the Value. The Husbandry used about them is the same as with other Oats.

Bullimon is Oats and Peas, or Oats, Peas, and Vetches, or Peas harrowed in together; which produces good Horse-Meat, and being

ing a mixed Grain, the Crop becomes more certain. The Quantity together is about four Bushels on an Acre. Some sow Oats and Beans, which does well, for they are easily separated after being threshed.

Oats are a Grain that Poultry also love to feed on, and it makes them lay store of Eggs above what other Grain doth. The Land on which Oats is to be sown, needs only one Ploughing into broad Lands, and harrowed in; but in case Clover is to be sown with them, the Ground ought to be brought into a fine Tilth by two or three Ploughings. The Quantity of Seed should be three Bushels, if Clover is sowed amongst them, and four without it: And I think the best Way is to sow the Clover, or other Grass-Seeds, a Fortnight or three Weeks after the Oats, *i. e.* when you roll them; for the Benefit is the same with this Grain as with Barley, or Peas. Because by this Method it will come up later than the Oats, which by Consequence will keep it under; whereas in a dripping Year, I have known the Clover grow so fast as to keep under the Oats, Barley, or Peas.

Oats are a Grain very apt to shed if they are too ripe before they are mowed, even to the Loss of Half the Crop; or sometimes the same Disaster is occasion'd by great Rains that fall after they are mowed, and by Length of Time loosen them in the Hull, so that great
Quantities

Quantities are scatter'd out before they can be got in. It is therefore excellent Husbandry to feed the Field first with Hogs, and then with a Number of Turkeys, Hens, or Chickens: Its true, Cocks and Hens are not Fowls that will bear driving, if the Field is at a Distance; but Geese or Turkeys will; and then there will be a great Improvement made, which otherwise would be lost, as I see it often done by many remiss Farmers. Again: If Oats are mowed too soon before they are ripe, and got in before they have had Rain, they will be very troublesome to the Thresher, and cost more Money and Time to get out; they will also be shrivell'd up and small-bodied, that will much hinder their Sale, therefore this Grain should be first examin'd by good Judgments before it is mowed and got in. Its a common Notion with some, that Oats will take no Harm, if the Water runs out of the Cart as they are bringing Home, but this is wrong; for such Oats will generally become mouldy and hoary in the Mow, and so stink as to spoil the Sale of them: If they said, they would take less Damage by Wets than other Grain, I am of their Sentiments; and if a Shower or two falls on them after Mowing, it often does them a great deal of Good, because it plumps their Kernels, and makes them thresh much easier and better, and for this Reason many

many let them lie on purpose in the Field for the Enjoyment of this Benefit.

It is a Grain that is obtained with the least Trouble and Charge, and where Ground is proper for them, they will pay as well as any. They are likewise necessary to sow as a Change to the Ground, that always best prospers under Variety of Seeds; and then several Crops may be had before a Fallow is allow'd it, especially if a Land is a Gravel, Chalk, or Sand.

BUCK, BRANK, *or* FRENCH-WHEAT.

IS a Grain exceeding advantageous on barren, sandy Ground. It is much sown in *Surrey*; much less sows an Acre of this Grain than of any other, even one Bushel has been found to be sufficient. It is usually sown as Barley, but later; it is also ripe late, and yields a very great Encrease, and is excellent Food for Swine, Poultry, &c. After it is mowed, it must lie several Days, till the Stalks be withered, before it be housed, neither is there any Danger of the Seed falling from it; nor doth it suffer much by Wet.

Buck-Wheat makes as good Lay for Wheat as any other Grain or Pulse, especially if it be

be not mowed, but ploughed in. But the best Way is, when it is in Grass, before it blossom, to feed it with Milch-Cows, who will tread it down, and make an excellent Lay for Wheat. Moreover, poor Cows will give great Store of Milk, it happening at that Season when usually other Grasses are burnt up, in a dry hot Summer; so have you a double Advantage by your Buck-Wheat.

A Gentleman in *Sussex* said, he sowed the Buck-Wheat the *May* before he intended to lay down his Land with Lucerne, which Buck-Wheat he ploughed in, and the next Year he had such a Crop of Lucerne that he was amazed at it. Vetches and even Turnips, no doubt, sowed with this View, and ploughed in, would do extremely well. And as *French* Wheat will grow on the poorest Land you have, a better Piece of Husbandry cannot be; for it is the greatest Improver of poor sandy Ground, and the best Preparation for Lucerne-Grass, which loves to be sown on this Sort of Ground.

This *French* Wheat, when sowed to dress the Ground, must have a fine Tith, and be sown in *May*; and when it is Knee-high, about the first of *August*, and in full Bloom, roll it well, then plough it in, in broad Lands. When this is done, there will some appear above Ground, between the Furrows that the Plough did not cover. This must be struck down with an Iron Instrument, like
a Paddle

a Paddle or Paring-shovel, and so let it lie three Weeks or a Month. In this Time it will smok, so as to be seen a great Way, like a Dung-hill ; and as it is a green Dressing will quickly rot in the Ground. The next Thing is to harrow it ; then plough and sow Wheat in broad Lands, under thorough, as the Vale Men do. This Way will dress the Ground for three Years, when Clover, Thetches or Turnips ploughed in, will but for Half the Time.

It is generally sold at the Seed-shops, in *London*, for about Half a Crown a Bushel ; of a triangular Shape, like the Kernel of Beech-Mast, and about Half its Bigness.

Buck-Wheat either ground or made into Paste, or whole (the former Way is better) is the best single Fatner of Fowl, and with this Food they will lay more Eggs than with any Sort of Grain ; Hemp-Seed, as they say, giving an ill Savour to the Flesh of the Bird ; but this only upon Report : If it prove otherwise, it would be one great Encouragement to the planting and sowing of Hemp, that the Seed should be of so great Use.

Objection. It is said to rot Horses, Cows, and other Beasts, if fed too long on it. Otherways, it is said to be one of the quickest Fatners that is.

Answer. If given for some Time constantly, and in large Quantities, it may be of ill Consequence,

Consequence, and rot the Beast ; but this I should think might be prevented by giving other Meat amongst it, or sometimes one Sort, and sometimes another ; as Brewers do by their Grains, mix sometimes Salt with them, to prevent their rotting the Horse ; and also by mixing Bran with them.

This great Improver of Ground is such a Friend to the Farmer, that if its Value was more known, I am sure it would be more made use of than it is : What a Benefit must it be to dress an Acre of Ground for Half a Crown, as well as Soot or most other Manures would for twenty or five and twenty Shillings : Indeed it is not all Ground would admit of this Management, but in Sands, Gravels, &c. this Grain will grow and flourish, if ploughed in at *August*, and Wheat be sowed on the same when it is rotted, there will undoubtedly be a good Crop ; and of Rye, if sowed in that Manner.

R Y E,

IS a Grain generally known and delights in a dry warm Land, and will grow in most Sorts of Land, so that the Earth be well tempered and loose ; it needeth not so rich a Ground, nor so much Care nor Cost bestowed thereon, as doth the Wheat, only it must be sown in a dry Time, for Rain soon
drowns

drowns it. They usually say a Shower of Rain will drown it in the Hopper, Wet is so great an Enemy to it; therefore dry, gravelly or warm Land, is usually termed Rye-Land, being more proper for that than for any other Sort of Grain. It is quick of Growth, soon up after it is sown, and sooner in the Ear, usually in *April*, and also sooner ripe than other Grain; yet in some Places it is usual to sow Wheat and Rye mixed together: But the Rye must needs be ripe before the Wheat; neither can I discover where a greater Advantage lies in sowing them together, than in sowing them apart. The principal Season of sowing Rye is in Autumn, about *September*, and after, according as the Season permits, and the Nature of the Ground requires. And in this Country it is frequently sown at this Time, for the feeding of the sheep early in the Spring.

Its general Use is for Bread, either of itself or mixed with Wheat; it makes Bread moist, and gives it a very pleasant Taste to most Appetites. It is also reported, that it yields great Store of Spirits, or *Aqua Vitæ*.

PEAS and BEANS.

OF all Pulses that are sown or propagated, Peas claim the Pre-eminence, not only for their general Use, both by Sea and
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and Land, both for Man and Horse, but also for the Diversity of their Kinds almost for any Sort of Land; and for every Season, a different Sort of Peas; some are white, some grey, green, &c. not necessary here to be enumerated, every understanding Husbandman knowing what Sorts best thrive with his Land. In a stiff, fertile Ground they yield a very considerable Crop, without frequent fallowings, as other Grain require, and destroy the Weeds, and fit and prepare the Land for an After-Crop; being an Improver, and not an Impoverisher of Land, as Husbandmen usually observe. Thus far *Worlidge* has wrote on Peas; but how far short of the true practical Method, will appear by what follows, *viz.*

Here we sow the Maple-Pea, which is a large Pea of a Hazle Colour, and a sweetish Taste, much lov'd by the Swine, and several of our Farmers kept wholly to this Sort, as finding by it the best Success. They are often sowed on the Wheat-Stitch, by straining them in after the Plough, about the first of *March*, and in Quantity about four Bushels to an Acre; and I have found them to grow very well on both gravelly and loamy Grounds. Others sow the Windsor and Horn Grey-Peas, as finding them to be the most hardy: Therefore sow them in *January* and *February*, nay sometimes at *Christmas*, upon your chalky Ground. Others again sow

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the *Dutch* Admiral-Pea, which is a large whitish Pea, and succeeds well, chiefly in moist Ground. But nothing is so much a Friend to the Pea as Chalk; and at *Kensworth*, by *Dunstable*, a few Years since, they knew nothing of the Benefit of it as to Peas, till a Farmer from another Place came among them, went to Chalking, and kept a great Flock of Sheep at the same Time, by which he obtained vast Crops; and his Method is now pursued, for it keeps the Roots dry and warm, and prevents the Ground binding them in; which often is done, especially when great Rains presently succeed their Sowing, and that particularly on Gravels; and for that Reason we are obliged to sow the Peas so much the shallower.

A great Farmer by me, mostly gives his Ground two Ploughings, if not three, for Peas, and says he finds this the best Way; *i. e.* he first bouts the Wheat-stitch, afterwards back-bouted it, and harrowed down. Upon this Ground he sowed half his Peas, by broad Casting, and ploughed them in under thorough. When this was done, he sowed the other Half upon the Ground, and harrowed them in. This is allowed to be the surest Way; for if one misses, the other hits. Again, by bringing the Earth into a Tilt, the Ground is loosened to let them out, the Weeds are some killed, and most checked, and the Peas thereby growing the
faster

faster, overcome them, and keep the Ground moist and hollow, and in a Tilt against the next Wheat-Crop; which often is sown as soon as the Peas are off. And indeed, where there happens to be a good Crop of Peas, there is no fear of a good Crop of Wheat after, if the Ground be but dressed. This Farmer, they say, had about 100 *l.* with his Wife, and laid it out mostly in chalking the Ground, and, though several Years ago, has great Crops every Year.

Some get a forward Crop, by sowing the *Essex Reading-Pea*, and felling them in Peascods, and then sow Turnips; after that Wheat, or Barley: A very good Way, and is more and more in Practice about us, on the warm and dry Grounds.

But above all Methods, I know of none that comes up to that made use of by a *Penny* Farmer, who rents about 300 *l.* a Year, and was the first that brought the Method into these Parts, from *Berkshire*. The Way I have practised, and got after the Rate of nine Bushels for sowing one of blue Peas in a moist, flat, loamy Ground. First, they plough the Wheat-stitch across, into large Furrows; afterwards, about *Christmas*, they harrow it down; then, in the Spring, they plough it the contrary Way, into broad Lands; and as they plough it, at about two or three Feet Distance, a Man follows, and strains in Peas, in Furrows that the Plough

makes, which is covered after by the Harrows; so that here are but two Ploughings, in all, after Wheat. Then, when the Peas are up about four Inches, hoe for the first Time; and when about ten Inches high, hoe them a second Time; which two Hoeings are performed here for 2s. 6d. each Time. By this Way your Pea-roots are secured against the Summer Drought, the Ground kept hollow and in a pure Tilth, and the Weeds so destroyed, that it is ready for Wheat, at the next Season, besides having generally vast Crops when your Neighbours fall short. His Peas are called by the Name of Poplar, that he generally sows in the drilling Way, and are of a large Sort. Another, of late, sows Horse-Beans and Horn Grey-Peas, mixed together in Drills, and hoes them; and I am of Opinion, that any Sort of Pea will best increase in this Fashion.

Horse-Beans are generally sown about *Candlemas-Day*, either in Stitches or broad Lands, on one Ploughing, and harrowed in, and these chiefly on the wettish Loams; and being more hardy than Peas, succeed where Peas will not, and are often sown together, because the Beans will help to keep up the Peas.

Peas are more sown in the Vale of *Aylesbury* than in this our Chiltern Country, because their Land being a black clayey Mould, produces vast Crops. which they generally
sow

sow for their *Lent* Grain, all under Thorough, and harrow down as they do their Wheat: And also for the great Convenience they enjoy in subsisting their Sheep, in some Measure, with the Weeds that grow among them, which the Sheep will eat and cull, without Prejudice to the Stalk, till they blossom; but the Dolphin-Fly I have known one Year almost to destroy them, and another Enemy as bad, is the hairy Bind, which so twists about the Stalk, as to hinder it from growing. This Horse-Bean will not do in Sands, or Gravels, nor in light Grounds. They are also proper to be sown on Land, at the first breaking up, where you intend to sow afterwards other Grain; because they destroy the Weeds, and cause the Ground to be hollow, and so fit it for following Crops of other Grain; and are on such Land, in some Parts, set by poor People, which saves Seed, and they come the truer. This Sort of Improvement belongs to all Cod-Ware.

The Citch and Vetch, whereof there are several Sorts, but two of most principal Note, the Winter and the Summer Vetch, though one sown before Winter, and abiding the Extremity of the Weather; the other not so hardy, and sown in the Spring; are much sown in some Places, to a very considerable Advantage. They are good, strong and nourishing

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rishing Food for Cattle, either given in Straw, or without, and are propagated after the Manner of Peas.

Tares are not usual in most Places in *England*; but where they are sown, they as much benefit the Land as other Pulses, and are to be preferred for Fodder, and feeding of Pigeons.

A certain Author affirms, that if Peas be taken and steeped in as much Water as will cover them, till they swell and come, and be so ordered as Barley is for Malting, only with this Difference, that for this Work, if they sprout twice as much as Barley doth in Malting, it is the better; the Peas thus sprouted if beaten small, which is easily done, they being so tender, put into a Vessel, and stopped with a Bung and a Rag, as usual, these will ferment, and after two, three, or four Months, if distilled, will really perform what before was promised; and of one Bushel of Peas may be extracted two Gallons of *Aqua Vitæ*, as strong as Aniseed-Water, usually sold in *London*. And thus a Spirit may be got from Rye, Oats, and such inferior Grain; also Roots, Berries, Seeds, &c. which are not oily. Also, that the Spirit, or *Aqua Vitæ*, made out of Grain not dried into Malt, is more pleasant than other; but I confess I am not a Judge of the Certainty hereof. Beans are now more in Request in the Chiltern, than ever; for in
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the wet Loam where Peas generally fail by the Water and cold, there Beans will better answer. Beans are sown on the Wheat-stitch on only one Ploughing; for if the Ground was oftner ploughed, the Bean would be apt to fall; and sometimes they are sown in broad Lands, on one Ploughing: And my Neighbour had such a Crop, on a Wheat-stitch, on a loamy Gravel, that he was forced to reap and bind them, but his Ground was in very good Heart. Now in the Vale, where there are no Stones, they mow them very close, and, after the Mower, a Man follows and wads them; but we, in the Chiltern, cannot mow them so close by Reason of the Stones: Therefore in a dry Year, when the Beans are short, they have the Advantage of us. Neither Wet nor Cold hurts us in the Chiltern as to our Beans, unless a very severe Frost happens, when by the former they often suffer in the Vale, because they lie so low to us. Now, besides the hale, hell, or hairy Bind, as some call it, that often spoils both Bean and Pea, both in Chiltern and Vale; there are several others that are fatal or pernicious, as that here called Langley-Beef. This I cannot say will utterly destroy the Pea-Crop, but will so cripple it, as not to be a Quarter Value. It comes up thick, and blows like a Sow-Thistle, that when the Peas are mowed, or hooked, the Weed generally disturbs the Workmen with its Flew, or Down, that

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they

they are forced to drink much ; and what is very particular, this Weed comes perhaps but once in a Man's Life, and sometimes often, so that the Farmers are at a Loss to account for it ; but it is remarkable, that it never hurts the Bean. Again, another Weed is the Curlock, which when thick, often destroys the Crop of Peas, and this takes them in a Tith, or not in a Tith ; and some say, it is caused by Seed being mixed among Turnip-Seed : But this hurts not the Bean.

Another is a Weed called by us Cat's-Tail, with a blue Flower. This comes but once in three Years, roots like a Dock, and runs deep, which hurts all Grain it runs amongst, but is hardly any where except in light, gravelly, chalky Grounds, as about *Dunstable*, &c. Here indeed we have a green Sort but does little Harm.

Beans are said to destroy the Twitch-Grass even of themselves ; but I cannot say they are proper to sow Clover amongst, because the Sheep and Lambs, that feed among them, even till the Blossom comes, may possibly pull up the young Clover, and so spoil it ; nor may they be sown on a Tith, for the Reasons aforesaid.

A Farmer sowed five Bushels of Beans amongst his Peas and Thatches on one Ploughing of the Wheat-stitch, in a very dry Time ; the Peas and Thatches failed but the Beans stood it, and he had twenty
Load,

Load, or an hundred Bushels on three Acres of Ground. This happened on a loamy Soil.

Winter-Thetches are sown about *Michaelmas*, in warm, light, gravelly Chalk or Sand, and by their great Burden of Haulm and Grain, they so kill the Weeds, and sweeten and hollow the Earth, as to make it a fine Tilth for Wheat; which very much delights to follow these, or Peas. This has encouraged several Farmers to continue the sowing of the Winter-Thetch, as being more successful in this hardy Grain than either in Peas or Beans.

The Fin on the Share of the Plough is of great Service, in the sowing of Peas, Thetches, or Beans, because by the Help of it, the Ground may be ploughed much the thinner, and the Harrows will the easier let out the Peas, Thetches or Beans that are sown under Thorough.

And sowing some under Thorough and some above, as I said before, is the best Way of all, in all Sorts of Grounds.

In the Vale they hold it as a Maxim, That if they can get a good Crop of Oats, they are sure the next Time they sow Lent-grain, to have a good Crop of Beans; which I suppose happens by sowing the Ground with different Seeds.

These are also great Improvers of Land, as well as a great Friend to the Farmer in particular, and are now become such a useful

ful Grain, that the like was never known; hardly a Farmer, as well the Rich as the Poor, but what fat Hogs enough, to keep them and their Families good Part of the Year from the Butchers Shop: The Excellency of this nutritious Flesh wants no Encomiums to illustrate its Value and Use; but yet I cannot help observing the Humour of the *Kentish* Farmers, who were the first as I know of, that brought up the general Custom of pickling Pork, which among them is so very common, that I remember a Ploughman had a Warrant for his Master for feeding him with this Pork three Months together. It has now almost supplanted the Use of Bacon in that Country, and with a great deal of Reason, because there is not that Waste in this, as in the Rhind and Rust of the other.

Peas and Beans are the best of Food for fatning of Swine, and make the firmest Flesh, of all other Grain. But a right Choice of Peas is of some Moment to the Farmer, who to act warily, should have both the forward and latter Sorts, for then he stands the surer Chance of good Crops, and therefore he ought to begin with his Horn Grey-Pea that will bear sowing in *January*, and is a most hardy Sort, and of a good Size. The next he should sow is a large Maple-Pea, about the Middle of *March*, for sooner will endanger their Growth: The next is a white

Essex

Essex Roding, and the blue Sort, that should be sowed in *April* on Broad-Lands, or in Drills; but the latter is the surest Way, and by these last, he is liable to enjoy a Mess of Green-Peas in the Summer Season, and also a fine Pudding of them, or Mess of Soup all the Winter.

GRASSES *.

THE vast Improvements that are made by sowing Land with Grass-seeds, do more and more encourage the Use thereof, and especially that of Clover, which daily obtains a singular Esteem amongst the Chiltern Farmers; because the late Method of harrowing in Grain after it, upon only one Ploughing, does save a great Expence and Time, and produce large Crops; and the several Sorts of Grass are all most requisite to be sown on such Lands as are fit for them: For there are many Farms in this Country, that have not any Meadow wet or dry belonging to them, that may by the Help of these Grasses be able to make Hay enough of their own, without fetching it at a dear Price many Miles from Home. And many dry Farms are so improved at this Time, that it has reduced the Price of Meadow-Land in many Places; and the Value of them has in some Places been raised very considerably.

Clover-

* See Mr. Switzer on improving Land by Grass Seeds.

Clover-Grass hath been the Name a great while, both for the great Improvement it brings by its prodigious Burthen, as also for its excellent Sweetness both in Grass and Hay, and the Riches with which it impregnates the Ground, by the Stalk and Root; the former by receiving the nitrous Dewes, which descend by them to the Roots and Ground about them; the latter also affords a Sort of Dressing to the Ground after it is ploughed up, and above all saves that great Expence which many have been yearly at for weeding their Ground; which is by this Grass entirely got, and also the Damage prevented that the Corn generally sustains by the Weeds treading amongst it: So that it may be depended on, nothing better clears the Ground of Trumpery and Weeds than a good Crop of Clover, as I have often experienced.

The late Practice with us, is to sow Clover but for one Year, and feed it with our Sheep by way of baiting them; that is, about Four or Five we let them out of the Fold in the Summer-Mornings, then feed them on the Common till about Nine or Ten, when we bait them in the Clover an Hour or two, so fold them about twelve, and let them out of the Common about Three in the Afternoon, and so bait again at Night in the Clover. This Way may be practised where the Common is nigh, and good Clover to bait

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bait them with. Then about a Fortnight before *Michaelmas*, on one Ploughing we sow our Wheat on broad Lands ; but this Way will not do often without Chalking, Liming or Turniping the Land, or Fallowing, because that Clover lying but one Year, fours the Ground more than if it had lain two or three Years down, which then rather sweetens and enriches it. Now by chalking the Land, it hollows, sweetens, and keeps it dry and warm, and so prevents in some Measure the Ground being soured, clung and heavy. And it is certain, that the second Summer's Crop is not near so good as the first ; but to make it answer, the best Way is to dung it, or to dress it with Street-dirt, Mud, Soot, or Ashes : This also prepares it the better for the next succeeding Corn-crop, which is also much helped by the Chalk, especially in wet loamy Land ; so that Ground will be a Tilth, and sweeten better by one Ploughing, than with two or three if there had been no Chalk.

Clover is often ploughed in to dress the Land about the Beginning of *August*, before it comes to seed, and you may turn in some fatning Cattle to eat the Head of it ; in this Case, about twelve Pounds should be sown on an Acre. The longer the Clover is, the better when ploughed in ; or if you will, you may roll it, in order to the more easy ploughing it into the Ground ; this being
green

green, will soon rot, and after some Rain has fell on it, harrow in your Wheat. If the Ground lies even, you need only harrow the Wheat in at once; but if uneven, then harrow the Ground once before you sow, and when sowed, harrow two or three Times long-ways, and once across; and if that won't do, harrow twice overthwart: They seldom dress on this; only drive a Flock of Sheep over it, to tread it in.

Again, Clover mowed, according to some Opinions, will produce as good or better Crop than that which is fed; the Reason assigned is this, because the Cattle that feed on Clover, always bite the sweet, and leave the four Parts, taking care not to dung or stale where they bite, but on the four Part; so that there, when the Corn is up, is generally in Tuffocks. Clover, if fed close is sometimes spoiled by the Cattle's biting through the Knot just within the Ground, which hinders its Growth afterwards, nor will a careful Farmer let his Clover be fed late in Winter; so have they the earlier and better Crop the following Spring.

To have a Crop of Clover, take under Peas: The Way is to get the Land ploughed twice or thrice in Winter, so that it may be got into a Tilth or Spring, (for it is meer Folly to sow Clover without a fine Tilth.) Then at the same Time you sow your Peas on

on broad Lands, harrow in your Clover, twelve Pounds on an Acre, and by this Means you have this Chance, that if you have a great Crop of Peas, perhaps they may smother and kill the Clover; but if a middling or poor Crop, then have you a good Crop of Clover. I have often had a pretty Crop of both Peas and Grass; the Peas were Horn-Grey and Maples, with a few Horse-Beans mixed amongst them; and the Grass-seed was six Pounds of Clover, and a Bushel of Trefoil Seed in Husk sowed on an Acre. Clover amongst Barley or Oats must not be sown till after two or three Weeks, that the Corn in that Time may get a-head, then sow from six to fifteen Pounds on an Acre. The finer your Tilth, the less Seed will do; this is an excellent Way, because the Barley or Oats will then keep the Clover under, shade its Roots, and prevent the Frost and Sun hurting it, and also the Fly from eating it: Whereas if you sow Clover at the same Time you sow the Corn, and wet Weather presently succeeds, it is in my Opinion ten to one if it does not spoil the Crop of Corn by getting the Mastery of it, as it has done many a one for want of knowing this. Immediately on the sowing of the Clover, roll it in, and it is sufficient. Clover is best sown among blue Puffins, or other forward Peas, which being sown late, even in *April*, they do not continue

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tinue in the Ground long enough to choak the Clover. Clover, if fed the first Year with Sheep, will be sure to fail the second Year ; for they so venom it by their Bite, as to hinder its recovery, and thereby give Opportunity to the Growth of Twitch-Grass and Weeds to supplant it.

Clover is best sown amongst Wheat in *April*, either on the Stitch or broad Lands, for these Reasons ; first because this Month is generally attended with Showers, which helps the Clover to take Root. Secondly, the Air being warmer than in the preceding Months, the Frosts and cold Weather have not that Power to hurt and spoil the young Grass. Thirdly, because the Wheat being now high, and under quick Growth, shelters it the better from the Severities of the Weather. To know the true useful Seed of Clover, observe if there be a good Quantity of the purple and brown-colour'd Seed amongst it ; for that shows the Ripeness of the Seed, when the white , brighter coloured is that which was not come to its full Maturity. When it is thorough ripe, and well got in the Seed will hold good for five or six Years, as I have known a Farmer experience. Others again will buy half old and half new Seed, to be more sure. It is sown by some in *February* and *March* amongst Peas, Barley, and Oats ; but in *April* amongst Wheat as I said before, If it is sown to feed, it should be thick ; if to mow, thin.

Clover

Clover for Seed, must be mown the first Crop for Hay, then let the second be mowed for Seed, which will all come even: Whereas if the first is fed, there will be Tusslocks left, and the Crop wont be true for Seed. Clover, if sown for a Crop by itself, is more luxuriant than in the former Cases; and it may then be cut in some moist, rich Grounds, three Times in a Summer, and leave a rich Crop for Winter to feed Cattle, before the Frost comes, (for that generally cuts it off.) We may judge of the right Time for cutting it by examining when it begins to knot, and then we may surely go to Work, if the Weather be good; and the best Way of making it Hay, with us, is found to be thus: After it is mowed, put it up with the Fork or Rake in little separate Parcels, about the Bigness of a Bushel, then turn it Bottom upwards several Times, so that you never separate it till it be carted Home; by this Means the Leaf is kept on, which otherwise would be mostly lost. And if we let it stand for Seed, we may make it in this Manner: It must first stand till the Heads are very brown and full ripe, known by rubbing them between your Hands. An Acre is said to afford two or three Bushels, and is a Seed that is hard to get out by Threshing; therefore *March* is the best Time for this Work, when the dry Winds blow, and should be let into the Barn as much as may be.

Clover is a Plant that will blossom, and bring ripe Seed the same Year it is sowed. Clover is said to feed as many Cattle on one Acre, as three Acres of natural Grass will do ; and it fattens Cattle fast, provided they are shifted. I know a Butcher that mowed an Acre and an Half twice in one Summer, and had ten Two-Horse Jogs off it. It is also related, that eight Acres have fed twenty Plough-Horses most Part of the Summer ; yet, notwithstanding these good Properties, Clover has been fatal to others in hoveing many a good Cow and Sheep. One Man, by me, has lost two Cows by it, and a third forced to be stabbed with a Pen-knife into the Paunch, near the Loin, and just behind the backward Rib ; which is the last Remedy, and saved the Cow's Life. And I myself lost a very good Cow, that was hoveed in the Night. This put me upon Enquiry for Prevention for the future ; and amongst the several Informations, I met with one that has answered my Purpose for these six Years past ; *viz.*

The same Day you intend to turn out, first give them as much Hay as they will eat ; then directly put them into natural Grass, and there feed them till they will eat no longer ; forthwith, after this, turn them into Clover.

By this Method, the Cow, having as it were glutted herself with two Sorts of Meat,
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is rendered incapable of feeding in the Clover ; but as her Belly empties, and her Hunger comes gradually on, she feeds leisurely, and so escapes being burst with Wind, which a hasty Belly-full of Clover generally occasions. But here I must be particular. If, after this, the Drift is long, or that the Cow is kept too long out of the Clover, so that she has Time to empty herself, and become hungry ; then, I say, that this Receipt may become ineffectual, and expose her as if she had never been managed. There are several Ways that have been practised when a Cow is hosed ; as to give her a Quart of Butter-Milk ; another Remedy is to give her immediately some Urine, with a Handful of Salt in the same, and drive her about ; another, that driving her hastily, will generally do alone : But the last Remedy, as I said before, is, when she is so swelled as to fall, immediately to stab her.

Others, to prevent it, will, at the first Turning in, give a Cow an Egg-Shell full of Tar ; others a Red Herring (the Head and Tail cut off) dipt in Tar. One Farmer, throughout the Summer, set one to watch the Cows, till they had their Belly-full, and then brought them out for several Hours.

Another turned them in for about Half an Hour at first, then an Hour, and so gradually, till they thought the Danger was over.

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Others say, it is the only Way to turn them in upon a short Bite, for then, they say, the Cow cannot fill her Belly so soon as to hove. As no Ground can be too rich for Clover, so can no one expect a good Crop without the Ground is in good Heart; and for that very Reason I take Barley-Ground to be the best for Clover, as being dressed for that Grain, in particular when Oats, Peas, or other Pulses are sown without.

Clover, I am of Opinion, is like other Seeds in the Ground, which being often successfully sown, by Consequence must tire it; and this I have heard asserted by an eminent Man, according to the Maxim amongst us, That if Peas are sown twice after Wheat, or other Grain, tho' in six Years Time, there will be no Crop of Value; for as Change and Variety is most natural in the vegetable Kingdom, so it is the Farmer's Business to follow Nature in this Point. But when Ground, by often sowing of Clover, is become clung and sour, the best Way is to plow it up the Beginning of Winter into four-thorough'd Lands, or otherwise, and get it into a fine Tilth the next Summer, and sow it with Turnips. This Method will save the Charge of dressing the Land, your Crop will more surely take, and the Turnips be more sweet than if the Ground had been dung'd; then let a Crop of Barley follow them.

Clover-Seed

Clover-Seed being sown in *April*, or the Beginning of *May*, upon the Wheat-stitch, is by some rolled at the same Time to fasten it ; but hereabouts it is generally sown without it : For at this Sowing, says an Author, there is no Need of covering the Clover-Seed, it being small, and so ready for Vegetation, will find its Way into the Ground ; as we may observe of many other Seeds of the like Nature, which will bury themselves into the Earth they are laid upon, without Help.

Six Acres of Clover, by cutting and feeding Cattle in Racks, from the Middle of *April* to the Middle of *October* following, maintained thirteen Cows, ten Oxen, three Horses, and twenty-six Hogs ; which, after the Rate of 1*s.* per Week for each Kine and Horse, and 2*d.* per Week for each Hog, comes to upwards of 30*s.* a Week, or 40*l.* for twenty-six Weeks : The Summer Profit then of each Acre is 6*l.* 13*s.* 4*d.* besides the Latter-Math. Forty Pounds Weight of Clover-Seed was sowed on four Acres, which at twice mowing, brought twelve Loads of Hay, and twenty Bushels of Seed. The first Crop was mow'd the 19th of *May*, the After-Pasture, as much as three Times the Ground of common Grass.

At another Time, Clover was mowed twice in a Summer for Seed ; but the last Time it was best Seed.

On a great Crop of Peas, just before they were hooked, they sowed Clover over them, which being stirred in by the Hook's striking on the same, and the Men's Feet, on a very hollow Earth, here became a special Crop; nor did the Severity of the next Winter hurt it.

This Clover-Grass, as well as other Grasses, is a Friend both to Landlord and Tenant; as I heard one say, who liv'd in a large Farm, that they could afford to pay more Rent, and yet live better than ever: For the Smith's Bill, Wheeler's Bill, Horse-Meat, Men's Labour and Time are saved by harrowing in Wheat upon one ploughing up of a Clover-Lay. And, indeed, it is no Wonder that the *Aylesbury-Vale* Men about forty Years ago (as I have been told) strove with great Might to suppress the Sowing of this Grass in the Chiltern or hilly Country, and to that Purpose disputed it at Law with those few, who, at that Time of Day, made use of it in the contiguous Part of *Hertfordshire*; but the Defendants cast them, by making it appear, how great an Enricher it was to their poor Grounds. Now what raised the Envy of the Plaintiffs, was, that they apprehended it would sink the Value of their Lands, by lowering the Price of Corn, Flesh, Butter, &c. Nor are their Lands capable of this great Improver, nor of the Turnip, by reason they are chiefly common

mon Fields, and of such a deep, hollow, marly, and wettish Nature, that both the one and the other would be mostly destroy'd by the Cattle's stolching; nor will they apple in their rank, moist Grounds, as with us, but rather run into Leaf.

Objection 1. Clover begins to lessen in the Esteem of some of our Farmers, on Account of that pernicious Quality it has, of hoveing Cows and Sheep; and therefore several, as well as myself, have this Year laid our Grounds down with Clover and Trefoil mixed together, which prevents any Damage from that Quarter. *Object*. 2. It is also not so valuable sown alone, as with Trefoil, because both these Grasses are Sweeteners of the Ground, and Killers of Weeds, and are more potent in answering their Ends, when mixed, than if they were single; the Trefoil being smaller leaved and stalked, and a greater Brancher, fills up those Vacancies which otherwise the Clover would miss, and so leaves less Room for Twitch Grass, and other Weeds to grow. *Object*. 3. That some make Butter and Cheese from Clover-Grass, but neither is so good as from other Grasses; for the Cheese is apt to hove, and the Butter not so sweet.

To this I answer, That Clover has these Inconveniencies with it: But for Horses, Hogs, Hay, or being ploughed in for dressing, it has its Excellencies; and where there

is a thick Crop of it, it will sell on the Ground beyond most other Grasses.

Grasses are evidently known to furnish many Farms with good Hay all the Year, that before could not cut a single Load, as having none but plough'd Ground belonging to the same; nor is this the only Benefit belonging to them: They likewise hollow the Earth, kill the Weeds, and enrich the Land with a great Quantity of Roots, that, when the Land is ploughed up, are left in the same, especially the Clover, St. Foyne, and Trefoil Sorts. Many of the Farmers differ in their Opinion, as to their Management: Some say, one Year's feeding or cutting of Clover or Trefoil is best, because by that the Ground has received sufficient Rest and Alteration, and that Wheat or Barley ought to follow the same, as paying more than a second Year's Grass. Others say, it is better to lay two Years, because the Ground gets so much richer by having a longer Rest, and the Roots of the Grass are the more bulky, and consequently do the Ground more Good: But then such Grass should be dress'd the second Year with Coal-ashes, or Soot, it being most natural for its Improvement, and by this Means the second Year will be as good as the first, and make the Ground the richer for the succeeding Crop of Wheat.

Try your Clover-Seed first, by sowing a little of it in a Garden, and if it comes up well there,

there, it will do so in the Field ; for there is a great deal of bad Seed mix'd with some good, and then it will disappoint the Hopes of the Owner.

Rye-Grass is a good Food, while green, for Cattle, and so is the Hay, if mowed in due Time, and got in well ; but, in the latter Part of the Summer, it grows dry, stubbed, and harsh, and good for little : It is poor Husbandry to sow rich Land with this Grass, because it only affords a Benefit the first Part of the Summer ; whereas Clover holds it even to *All-hollontide*, and longer sometimes ; therefore, poor gravelly Grounds, &c. are most fit for Rye-Grass, and yet this Sort of Land may be put to a far better Use, as I shall hereafter make appear.

St. Foyne, and Lucerne, are truly worthy of Encouragement, for their bulky Crops, when all other Grasses are burnt up ; but then they must be adapted to a right Soil, or else your labour will be lost : They both run much alike, with their carrotty Roots, and that so deep, that the Sun has the least Power to dry them of all others, tho' they are sowed in Chalks and Sands, which are the most proper Soils of all others for their Growth. They both will do well in dry Gravels and Loams, but not in Clays or wet Loams. However, any of the aforementioned Grasses are admirably beyond that ill Piece of Husbandry, which too many of the negligent
Sort,

Sort, to my Knowledge, have and do use ; and that is, the letting of the wild Honey-Suckle stand for a Crop the succeeding Summer, after a Crop of Corn, which it grew among ; for it is only a Weed, occasioned by want of due and true Ploughings, that would certainly eradicate and destroy this Incumbrance, that often cripples whole Crops of Corn, especially in wet Summers, when it grows most rampant ; and this they suffer to grow, to feed their Cattle, instead of a Crop of Clover, or other Grass, to the great Prejudice of their Land, that must consequently abound with this Weed the more, as Opportunity, by this Means, is given it, to enlarge and increase its Roots *.

R E Y - G R A S S .

TH E Rey-Grass when young, as in the Spring, is proper for the Fatning of Horses, and is of very great Advantage for Milch Cows, in that it causes Abundance of Milk, making excellent Butter and Cheese, and is of great Service for Ewes and Lambs, or to feed any large Cattle in those early Seasons of the Year, especially if the Spring be warm, and the Wet does not lie too long, and before Clover or other Grasses come in,

* See Mr. Switzer's Method of improving Land by Grass-Seeds, Burnt-Clay, &c.

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it being more quick than they : For, in hot Weather, such as in the Months of *June*, *July*, and *August*, it grows harsh and dry, and is fit for nothing.

As for the Soil ; Clay, or any other sour and uncultivated Land, is proper for it, nor doth it take up so much Tillage as other Grass-Seeds do, growing well amongst the most stubborn Clods that lie in the Way : On which Account, where any Gentleman has any cold Lands, they can't be better employ'd than in such a Way ; it being always observable, that those Lands which are not fit for Clover, Saint-Foin, Trefoil, or other Grasses, may be much improved by Rey-Grass. It will last some Years, and what is of great Moment, the Feeding of Cattle is of mighty Advantage to it, because it will, in the Spring, sustain double the Quantity that other Lands will do, Acre for Acre ; but then it is of no Manner of Service in Autumn, except it be a dripping one, or for Hay.

Being sown in Autumn, it will be fit to graze, the next Year, for Horses and other black Cattle, without Danger of making it bleed.

If this Seed be sown on Land entirely devoted to it, and on which, in all Probability, no Corn, at least but little, will grow, then two Bushels is the least that can be sowed there.

Upon

Upon the Whole, tho' Rey-Grass is an Herb proper to be sown upon cold, coarse, austere Ground only, yet I have often been sorry to see it admitted into Lands which are warmer, and consequently of too great a Value for it: For whoever would lay down any Land that is tolerably good, can't do it better than with the common Hay-Seed which comes from the finest, upland Meadow, and a proportionable Quantity of Trefoil with it.

We here commonly sow it mixed with Clover-Seed, in the Spring, with Barley or Oats, thus: When the Grain has been harrowed in, then sow the Grass-Seed; if Rey-Grass alone, then harrow in two Bushels on an Acre; but if with Clover, then one Bushel harrowed in as before, and about a Fortnight after, roll six Pounds of Clover on an Acre.

Rey-Grass seldom wants any Assistance, till after it has been sown a Year or two; but when it does, you may allow twenty or thirty Load of the Shovelings of Streets, or Earth dug out of the Highway, and mixed with ten or fifteen Load of Dung, and five or six of Sea-Sand, Lime, or Coal-Ashes. And this is, indeed, a solid Improvement for any of the Grasses before or after mention'd. Some mix it with Fowls Dung, which adds very much to the Fertility of Grasses.

Objection.

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Objection. Many refuse to sow this Grass on Account of its being one of the greatest Sourers of Ground ; for, by its stringy, tenacious Roots, it lays such strong Hold of the Earth, that it thereby becomes clung, heavy, and sour. Secondly, It is a Grass very hard to destroy, notwithstanding the Ground is often ploughed.

To this I answer, That in clayey Grounds, or any other, this Grass is most serviceable, because early in the Spring, it may be fed before the Clover or Trefoil comes up, with which it is sown ; but certainly it is hard to clear the Ground of it. And to do it, I think the best Way is to plough up the Ground, and give a Winter's, then a Summer's Tith, for two or three Months, and sow Turnips. Gravels are easier clear'd of it than clayey Loams.

TREFOIL.

LANDS naturally kind for Corn, says a modern Author, and unkind for Grass, are undoubtedly kind for Trefoil ; and tho' it be much impoverished by long sowing, that it will bear Corn no longer, yet such Land being sown for Trefoil Seed, will become worth 20 or 30 s. *per* Acre. As for the Soil in which it will grow, Experience tells us, that even clayey, stiff Ground,
or

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or chalky, rocky, gravelly, or hilly Ground of a very small Value, may be improved by this Grass: But if the Land be a Clay, that then it must be laid as dry as you possibly can: That the Pasture for Trefoil is as good, and much better than any, for Cattle, and especially for Cows; for it will not only cause them to give more Milk in Quantity, but also better in Quality, and likewise make Butter and Cheese of a delicate yellow Colour: That the Hay thereof is nourishing, and will make Oxen or other Cattle as fat as any other Hay, if it be made in a good Season, that is, whilst it is full of yellow Blossoms, and not over-dry. (for it is soon made.) It does not lose its Colour, nor shrink in the Making, as Clover-Grass does; but is much finer, greener, and in all Points better for Cattle than Clover is: That it is particularly good for fatning of Ewes and Lambs, and free from breeding Rottenness, which other Pastures are apt to do. And whereas Clover-Grass doth daily make sick and kill many Cattle, this is free from any such Danger; and the Cattle are so sensible of it, that they will not willingly feed on the Clover until they have eat the Trefoil to the very Earth, as may be soon seen, if one Half of the Field be sown with one, and the other with the other: Therefore if you are resolved to sow Clover, the safest Way is to mix one Half of Trefoil

foil with it. That (in Competition to Clover) Trefoil will endure much the longest, if it stand not for Seed; for that is destructive to the Root, and the Sap is gone that should nourish it, because it must be cut late, and in the Heat of Summer. The next Year after the Crop of Corn is taken off, you may pasture or mow it; but if it stand till the Seed is ripe, the Hay is spoiled, and the Cattle will not eat it. The Time and Manner of sowing it, is when you sow Oats or Barley, which should be done after the following Manner: The Ground being sowed and harrowed in with Corn, then sow the Trefoil-Seed, and harrow it once in a Place, and then roll it. Two Bushels, if in the Hull, is often sown on an Acre; but if the Seed is naked and clean, then sow twelve Pounds on an Acre, and only roll, and not harrow in: But if mixed with Clover, then six Pounds of each. The proper Time of sowing is from the Middle of *March* to the latter End of *April*. I sowed this Year six Pounds of Clover-Seed and a Bushel of Trefoil in the Hull, on an Acre of Ground, and it cover'd it full thick: This was amongst Barley.

Trefoil must be cut for Hay whilst in Blossom; it is soon made, and need not be dried so much as common Hay or Clover. Oxen are greatly nourished by it green, and by this Fodder they will grow fat in a short Time.

Time. Trefoil is of such Advantage to Land that is over-run with Twitch-Grass, that as it grows quickly and branches much, it will so over-shadow the Couch-Grass, that in a little Time it will smother it. Again, this Grass, no more than Clover, draws not any Nourishment from the Earth, which is proper for Corn, as an Author writes; and being ploughed in when we have a Mind to sow Corn upon the same Ground, it makes a very good Manure, and prepares the Ground very properly for Corn. This, like Clover ploughed in when almost Knee-high, is called half Dressing, as *French* Wheat is whole, because the latter manures the Ground for three Years, and Clover and Trefoil but half the Time.

This Trefoil has a peculiar Quality belonging to it, different to all other Grasses that I know of, and what neither Authors in their Books, as I can find, nor Seedsmen in their Shop-Bills take the least Notice of: And as it is of great Advantage, I shall be the more particular. This Grass then is sown by itself, either naked, or in the Hull, to the Quantity aforesaid. Now if the Trefoil is let go to a good Head before you turn in your Cattle, it is a great Chance if so much does not escape their Mouths as to feed the Ground, for this Sort parts with its Seed sooner and easier than another.

Again,

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Again, if it stands to be mown for Seed, then it surely leaves so much Seed behind on the Ground, as will seed it next Year, and thicker than before. But as there are two Ways of preserving its Seed by Shedding, so there are as many to hinder it; for mowing it for Hay, and after that feeding it close, prevents its taking the Ground for the next Year. The other Way is by giving the Ground only one Ploughing on broad Lands latterly, and harrowing in Wheat. Again, this is to be remarked, that the more you plough any Ground, and the finer Tilt you make for Wheat, the surer this Grass comes the following Year; and by this Method it may be continued a great many Years, that is, by hoeing Wheat and Grass for Seed or Food alternately; as one does at *Barkhamstead* on a gravelly Ground, to his great Profit, who is a Seedsman.

Trefoil is now in great Vogue for its several good Qualities, and is of late sown with Clover-Grass to prevent its hoveing Cattle.

Object. Notwithstanding what is publickly, over and over again, writ by some of the learned Gardeners, and others in the Tracts of Husbandry and Farming and also in the Seed-Shop Bills, that Clover and Trefoil draw their Nourishment from the Earth in such a different Mode as not to offend the Growth of the Grain among which it grows;

I here aver the contrary, and which I can prove by several Instances, *viz.* The Clover and Trefoil at first Sowing, with the Corn, must in its Infancy draw its Subsistence in the same Manner as the Corn does, and from the very Earth, that otherwise would be spent in nourishing the Grain, by Reason they both at first take their Growth from almost the Surface, as they are harrowed in together; and afterwards as the Grass-Roots strike their pecked or spreading Roots down, (which sometimes descends to the Depth of six or eight Inches) the uppermost Fibres have still their Proportion of Suction from the Ground near the Surface; which very Reason, by the Help of frequent Rains in the Summer, has occasioned the Loss of vast Quantities; nay, I may say near whole Crops of Corn. As a great Farmer at *Studham*, near me, suffered, he protested, the Loss of half his Crop of Barley, by the Clover's luxuriant Growth. And in *Northchurch* Parish, upon a gravelly Soil, the Farmer mowed his Trefoil for Seed, then ploughed it into broad Lands; after that, hack'd or comb'd, then sowed it in Stitches. The Wheat thus sowed on a fine Tith, flourished to Admiration; but before the next Harvest, the Trefoil grew so fast, that it crippled the Wheat, and made it hardly worth reaping. And however some may succeed by letting Trefoil grow among their Wheat, I am sure they run a great Risk

Risk of losing their Crop ; and where they do succeed, it may be owing to the Defectiveness of the Seed, a dry Summer, or that their Ground, when sowed with Wheat, was clotty and sourish, which impedes as much the Growth of this Grass, as a fine Tilth facilitates it. Now, therefore, the surest Way to be safe in obtaining this most serviceable Grass, is to sow and harrow it in with Barley in the Hull or Husk, which keeps it from taking Root longer than if sown naked, by which Means the Barley or Oats get the Start ; or if sown naked, then let it be a Fortnight after the Barley is sown, as is before-mentioned. But several sow it and harrow it in the Husk with Peas, as I did this Year, and it took well ; and I am of Opinion, it is of such a hardy Nature, as not so soon to be smothered by the Pea-haulm, as Clover is.

SAINT-FOIN,

IS an extraordinary Improver of dry, gravelly, sandy, chalky Grounds, even tho' they have been over-run with Heath, Ling, or Fern, or Brakes ; for this takes deep Root in the Ground, which being large, supports itself in the driest, hottest Season, and will produce a great Burthen when there is little Grass to be had elsewhere. The most

barren Land will produce this without much Manuring, and that should be Soot, about fifteen Bushels on an Acre, every third Year; some put more, and seldomer; but that is wrong, as being an Extream: And when it has stood twenty or more Years, the Ground will produce valuable Crops of Corn. In the sowing this Seed, as well as all other foreign Grasses, it must be observed, that the Ground be brought into a very fine Tilth, else it will not answer. It is commonly sown amongst Oats or Barley, but the latter is best; and at the same Time sow your Soot over the Corn and Grass-Seeds. The Quantity of Saint-Foin Seed is at least four Bushels on an Acre, and the Barley three. But this Sort of Grass-Seed must be harrowed in at the same Time the Corn is harrowed; so that one Harrowing will serve both, because the Seed is large, and requires to be well covered. The greatest Care that is to be taken, is the not feeding it at all, the first Summer, nor very early the next Spring, because it will be apt to bleed itself to Death: For the Sweetness is such, that it will provoke Cattle to bite into the Knot in the Ground, and so spoil it.

Root in the Ground, which being large, sup-
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LUCERNE

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LUCERNE-GRASS, *otherwise called* MEDIC-CLOVER, SNAIL-TREFOIL, or BURGUNDY-FODDER. *

THIS Plant is a most valuable Grass for its excellent quick Growth and Duration, and has raised some of the greatest Improvements in *England*. It is of a succulent or juicy Nature; it makes Cows abound in Milk more than any other Fodder, whether they eat it green or dry: Oxen are very speedily fattened by it, and Horses are no less advantaged by feeding on it. Its Crop for the most Part is double the Quantity of Saint-Foin, and may, if it likes the Ground, be mowed three Times in a Summer. But let it grow where it will, it may bear two Cuttings, the one in *May* and the other in *August*, and carry a strong Pasture for Winter.

The Soil most proper for it, is light Ground, such as Sand, Gravel, or Hazle Mould; or if the Ground be very stiff, then burn the Surface, which is called Denshiring, and by that Means the Soil will become fit for it; but it has been tried in stiff Soils and moist Land, and has succeeded very well; this has been done in my Neighbourhood on a clayey Bottom, under the Mould on a cold Hill, and proved well; but on such Sort of

F 3

Ground

* See Mr. Switzer on this Subject.

Ground it should be sown late, as in *April* or *May*.

When we make Hay of it, we must dry it well before we house it, and it should be given to Cows with Barley or Oat-straw, like Clover. But certain it is, that sandy, chalky, or gravelly Ground will best agree with this valuable Grass, when it is well till'd; and undoubtedly the richer Earth, the less Seed will serve, and the more it will fill and increase. Eight or ten Pounds will be sufficient on rich Land, but twelve or thirteen on Land which is poorer. On some poorer, sandy Land, that would not bear common Grass, there have been prodigious Crops.

Stoney land indeed is without Probability of Success; because the Seed being very small, is in course buried in such Ground. The Dressing is the strewing by Hand, out of a Seedcot, Wood, or Coal-Ashes, Sea-Sand, Malt-Dust, Clay, Peat, Fern, or Brick-kiln Ashes, which will cause a new Fermentation in the Ground, if sown with or immediately after the Seed, and cause it to spring up apace, tho', in my Opinion, Soot exceeds them all. The Grass is somewhat tender, and may as well be sown in *February* and *March*, in a warm dry Soil and Situation, as in *April* and *May*, on a Clay, wet, or cold Ground. And in Case the Lucerne, when old, should be cut off a little by the cold Weather in the Months before-mentioned (which

(which is the only Misfortune of it) what can be better for it, than to mow off the dead Grass, and giving a Sprinkling of Soot or Ashes? If the Nature of the Ground will admit of it, it should be ploughed ten Inches deep; for the Root of this Grass runs like a Dock, a pretty Way into the Earth. It should be sown amongst Oats or Barley, and after the very same Method as Clover is sowed, not harrowed in, but rolled about a Fortnight after the Corn is sowed; and, if thick sown, will destroy Weeds to the purpose, and last twenty Years. An Acre will keep three Horses a Year, and fatten them in ten or twelve Days.

Object. They say it is dangerous turning in Cows to feed on this Grass, because it is apt to hove them.

To this I answer, It is so, for either Cow, Sheep, or Ox; but if the Directions are observed, as mentioned in the Account of Clover, there is no such great Danger*.

PLOUGHINGS, SOILS, DRESSINGS.

IT is evident, that Earth often digged and skreened in a Garden, produces the best Tillage; so is it the principal Reason, that ploughing and harrowing of Land makes it the most fruitful; and this by some is called

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* For a farther Account of Grass Seeds, See Mr. Switzer's Compendious Method, &c.

called as good as a sorry Dressing : For by this Means the Spirit of the Earth, or the *Sal Terræ*, is collected, as also that of the Air and Rain ; which several vegetable Salts being put into a Condition to act, by the Fineness and Sweetness of the Earth, are the Life and Nourishment of all Things that grow therein ; and for the Want of these two Qualifications many Crops have been lost. So that upon the due Knowledge of Ploughing, and the right Practice thereof, depends chiefly the right Benefit of Farming. Besides, a light Earth is capacitated to receive the nitrous Dews and celestial Influences, which coagulate and fix on the same ; when a heavy, sour Earth misses, and goes without this Benefit. And therefore I shall here endeavour to supply in some Measure, I believe I may say, what most Authors have been hitherto chiefly wanting in ; and the main Reason for their Omission, I presume, is, their not being acquainted with the practical part of Ploughing, although it is certainly the most necessary Branch of Farming.

Strong clay Grounds cannot be too often ploughed and exposed to the Sun and Frost. Gravels, Chalk, Sand, and such light Grounds, are much sooner brought into a Tilth with less Ploughings ; for frequent Ploughings in these Sort of Grounds are of very ill Consequence, because, as we say, they are soon worn out by it, *i. e.* the heavy
Rains

Rains falling on the Gravels, wash the Mould away, and leave the stoney Part too naked ; and so on the Sands and Chalks, it washes away the best, and leaves the grosser, worser Part behind. And, therefore, 'tis the modern Practice to sow these Lands with Clover, Trefoil, Lucerne, or other Grasses, which, by being laid down one Summer, will, in that Time, obtain a grassy Crust, which the Gravel will feed on some Time after ; then, about a Month before *Michaelmas*, or later, give it one Ploughing, and harrow in Pirky or Dugdale Wheat.

But 'tis the Expression of a great Farmer, That as sure as he ploughed such a Lay deep, so sure he was to lose the greatest Part of his Crop. Therefore he ploughs such grassy Crusts in as small narrow Thoroughs as possible, and as shallow as he can, then sows his Wheat and harrows it in ; and if any Grass or Twitch appears, he and his Man used to rake it up, and carry it away.

Wet Grounds, that have a clayey Bottom, are not so proper for this Sort of Culture, because the Water, Frost, and Winds are apt to chill and kill the Wheat ; and this Sort of Land being naturally sour, is very apt to run with Twitch-Grass and other Weeds, and so choaks the Wheat, as to make it a very thin Crop at Harvest. Yet where such wet, flat Land can be drained, or well chalked, or
limed,

limed, there Allowance must be given ; and possibly there then may be good Crops of Wheat succeed, but it must be under such particular Advantages : For I have known the Farmers in the Vale, that lie flat and wet, to forbear sowing Wheat, and prefer a Barley Crop, because the former lies and suffers by the Winter's Extremities, when the latter only by the Summer.

For this Reason, Stitches or Ridges are best to sow Wheat on, because it prevents in some Measure, the blasting of it : For Wheat is easily overcharged with Water, either in Winter or Summer, and they defend it from the Extremities of Weather, especially cold Winds ; for the more uneven any Piece of Land is, the better it bears the Violences of Winter : Therefore, in the Champain Countries, where they do not plough and sow in Ridges, they harrow not their Wheat in, but sow it under Thorough, and leave it rough, because it breaks the fleeting Winds. And in Imitation of this, the Gardeners now-a-days, lay their Gardens shelving, not only the better to shelter their Seeds from the cold Winds, but also to give them the Advantage of the Sun : And, therefore, it is a Notion entertained here, that Wheat on the broad Land, is more apt to strike or blight, than on the Ridge or Stitch.

I have been inform'd, the following Method is made use of in some Places to drain Land :

Land : If on a flat Piece of Ground, they dig down, at Discretion, three or four Feet wide at Top, and so narrower, till they come to the Bottom ; which Trench being cut to a Fall or Descent, they, at small Distances, leave Shelves on each Side, from the Bottom upwards, perhaps two or three, according to the Depth, which are cut on each Side in the Earth ; then fill the Bottom with Stones, or Beech, or Brush Faggots, and lay on, till within a Foot or two of the Top ; when they throw on the Mould, and plough it, as if no Digging had been,

Where such flat and wet Ground is sown with Wheat, on one Ploughing up of Clover or Trefoil, a good Way is to let a Crop of Turnips follow, the next Summer, to sweeten the Ground, and kill the Twitch and four Grass : And, in order to this, I plough the Wheat-stitch down presently after Harvest. This, with some more Ploughings, prepares the Ground for any Grain, or Grass, the next Spring or Summer.

In all Grounds that are infested with Weeds, and where a Fin on the Share can be used ; there it will do a great deal of Service, by cutting off the Heads of the Hog-weeds, bruising, and crippling others, and wholly extirpating the smaller Sort.

After a Crop of Turnips are eaten off, and you design to sow the Land with Barley, let the first Ploughing be as shallow as possible,

possible, and the second more deep, then harrow and sow : By this Means you have the Benefit of the Sheep-dung ; but if you plough too deep the first Time, you lose Part of it.

Plough all Sorts of binding Ground, especially Gravels, very shallow, when you sow your Grain ; otherwise, a great deal of it will not come thorough.

Chalk, that is yellow without Side, and fat and moist within, is the right, and pays better than Soot, or any other Dressing ; but hurlocky, stoney Chalk, does a great deal of Harm instead of Good, and will lie six or seven Years without shattering. And the best Way to enjoy Chalk, is to put on a Wheat-stubble, or a Barley-stubble, and sow it with Peas, on one Ploughing, for the first Time ; but be sure plough it in very shallow, because it naturally descends, and is often lost by indiscreet Ploughings. Chalk does most Service on wet clayey Grounds, and of late Years they chalk their Gravels to keep them from Binding. It is said, that Chalk is in its Nature cold and dry, will sweeten the Earth, make it hollow, and keep it dry, and thereby fits it for Improvement by other Dressings. Small Chalk-stones, scratched up by the Sheep in Summer, will turn to Flint ; therefore Chalk must not be dug in Summer, against Winter, because it will harden by the Sun and Weather, and not be so good ; so that

that the best Time is between *All-bollontide* and *Candlemas* to lay it on.

Horse-Hoeing: This is a pretty ingenious Contrivance, to save the Expence of Men-Hoeing, (which generally is 7s. an Acre in all) if managed accordingly; which cannot be done, unless a right Plough is made use of. The Author of a late Book, I know, describes the Invention of one; but a Person, near me, committed a Mistake in using the common Wheel-plough of *Hertfordshire*: First, He made two Thoroughs close together, and drill'd in Horse-Beans by the Hand; then, at eight Feet Distance, he did the same, and so on throughout the Field; but this did not answer to above half a Crop; for the Wheels kept the Share-Point from coming near enough the Rows of Beans, to turn up the Mould on their Roots, and so kill the Weeds; so that they were, in a great Measure, choaked at Harvest. I took a Neighbour with me, and viewed their Proceedings more than once, and observed, that our Vale Foot-Plough is proper for this Way, provided Wheels are fastened to it; which is a Piece of Iron, about twelve Inches long, with Notches: By this you may set the Plough nearer the Rows, or further from them, and so turn up the Earth close to the Stalks, and also all between the Rows. And it is also thought, that the Rows of Beans, at four Feet Distance, are better than at eight, because there

there then will be a double Crop, and the Ground altogether clean'd as well for the next Wheat-Crop, by two or more Horses, drawing lengthways, in the Foot-Plough. The Design of this Practice, is to employ the fallow Ground, and get a Crop off it, and at the same Time prepare the Land for Wheat, the *Michaelmas* following, as well as if no such Crop had been, (for Peas and Beans hurt not the Ground as other Grain does :) By which Method you have the Earth every Year under Crops, sometimes by this Cod-ware, and sometimes it may be done by foreign Grasses; so that the third Summer is here got, which formerly used to be lost, to the great Damage of the Farmer.

Lime, being a calcined Chalk, abounds with alkalous Salts, and is a great Friend to Vegetation, used in the before-mentioned Manner, in the Account of Wheat. Lime slack'd, and sow'd on a wettish Ground, did a great deal of Service in a cold, wet Spring, by keeping the Wheat growing, when others yellowed and died. Lime makes Wheat gather, and become more thick. Lime, mix'd with Earth and Dung together, is a very excellent Compost for any Land, as likewise is Clalk mix'd with Bottoms of Ponds, or Parings of Commons, or Balks of Fields, and let it lie a Year, two, or three, being several Times well incorporated: This will be shatter'd by the Frost, and become fine Dressing,

Dreſſing, eſpecially for Graſs-Ground. Some will chalk Graſs-Ground about *Michaelmas*, ſaying, it will ſoon devour and eat it up; that it thickens the Ground, keeps it dry and warm, and kills Moſs. Others will chalk over Clover that has lain a Year or two, and it will hold longer. A Perſon harrowed in ſlack'd Lime with his Turnip-feed, on a wettish, loamy Ground, about forty Buſhels to an Acre; this kept the Fly off, when others were eaten up, and had a good Crop; the Quantity was two Pounds of Seed on an Acre. The Lime having lain in the Field, till the Weather ſlack'd it on an Heap, then ſowed and harrowed in twice in a Place, then the Seed was ſown and harrowed once in a Place. The black Caterpillar had juſt taken a new-hoed Piece of Turnips, and eaten a few Yards ſquare clean up, and would have quickly deſtroy'd the whole Field; but the Owner throwing ſome powder'd Lime over, kill'd them all: So that Lime kills Slug, Caterpillar, Fly, and Worm, as does Soot, Aſhes, Brine, or Chamber-lye.

Stale, or Chamber-lye, if kept a Week, two, or three, will be ſufficient Dreſſing, without any Thing elſe, poured on the Wheat-Stitch through a Garden-pot Spout, the Man walking with it in his Hand all the Time he ſprinkles it on; a little nourishes, but too much kills. This may be done in Winter,

Winter, even till the Wheat spires, or longer, and will soon recover the salt burning Heat, by the Roots being shaded ; but on Grass-Ground it should not be put on after *February*, because it's longer coming up before the Root is shaded. Its Virtue sometimes may be seen, in four or five Days after it's put on. Used right, as one said, 'tis the best of Dressing, for every Thing that grows, from the Tree to the Shrub. A Horse-keeper used to take the Stale out of the Hole in the Stable, and throw it on the Wheat-stitch ; and it made it so rank, that though they cut it several Times, yet it became all Straw, at Harvest, and no Corn. I knew a Vine, at the Back-Door of a Publick-House, that had a little Bank raised about the Root ; in this the Guests frequently piss'd, and it produced more Grapes, every Year, than any one Vine in these Parts. And the like Success, in Proportion, I find by throwing Stale on the distant Roots of my young Apple and Pear-Trees. I save it in two Kilderkins, which increased in Strength, by longer keeping.

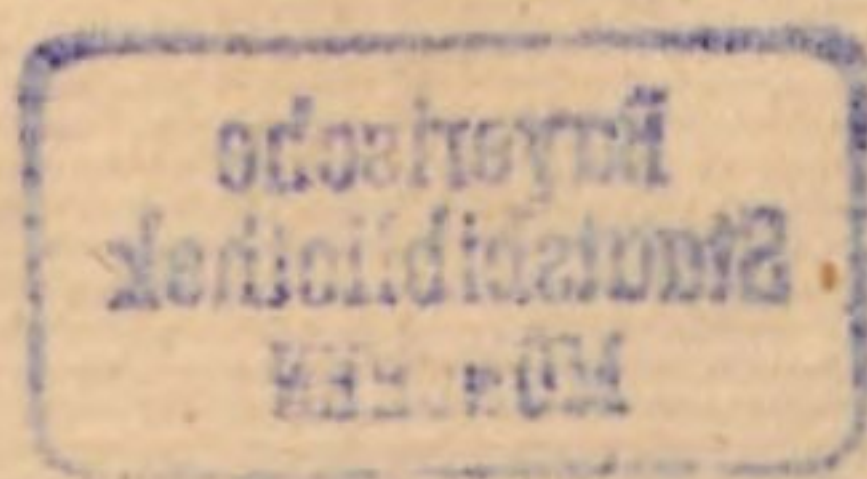
Dungs. Cow-dung is the worst Dung to endure Wet of any other ; but, kept in Cover, and mix'd with short Horse-dung, Ashes, and Chamber-lye, is excellent Manure, sowed out of the Seed-cot, with the Hand, for any Grass or Grain. Others save this short by itself, or put it under Fowls.

If Dung is to be laid on Wheat, or Barley, after it is sowed, it is best done immediately, because then the Blade will easily make its Way through ; but if this is done any thing late, it burns up, and yellows the Blade, and rots it. Dung was put on Wheat, the 6th of *April*, by a negligent Farmer, but did little Service. Wheat on other Straw, put every Night into a Fold on Grass-Ground, in Winter, will be trod in by the Sheep, and do Service. Another sows Malt-dust on new-sown Barley, and is a good Dressing ; and so are any Sort of Ashes. But above most is Soot, about twenty Bushels, or more, on an Acre of Wheat or Barley ; if on Wheat, it should not be sown before *Candlemas*, because the Cold, long Rains, and Snows, are apt to wash it in too soon ; nor is it safe to sow it much later, lest a Drought succeed, and instead of assisting the Wheat, will help to burn it up, especially on the Gravels and Sands. I think him in the right, that won't put his Dung on the fallow Ground, till a little before he sows, because it is apt to breed Weeds, and be wasted by the Sun, Rain, and Air. Dungs ought to be well rotted, turn'd, and mix'd, before they are laid on the Ground, that the Seeds of Weeds may be spoiled, and hindered propagating. The Mud of a Pond, not emptied before in thirty Years, was put on Sward, and it being of a greasy, tenacious Nature, was allowed, by the Countrymen, to

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be Dressing for the same for seven Years to come ; but a gravelly, or clayey Mud, rather preys on, than nourishes the Ground. A Person I knew, dress'd his sharp Gravels with Coney-clippings, Horn-shavings, Hoofs, &c. which does not benefit the Ground presently. He left his Farm about two Years after, when the succeeding Tenant had the chief Advantage thereof. Besides, as an ingenious Farmer said, long Horse-litter will answer as well, either ploughed in, or immediately laid on the Wheat, or Barley, after it is sown. Gravels being of a hungry Nature, will feed on it, or draw it all in by the next Harvest. This long Horse-litter preserves this Sort of Ground from shoaling, in frosty Weather ; for it being a light, loose Earth, is apt to shatter, and leave the Wheat uncover'd, as will also the Chalks and Sands. I know a great Farmer, that calls Gravels the *Land of Forgetfulness*, as being of a hawky, voracious Nature, devouring a single Dressing too soon, and then the Crop dwindles and complains ; so that, where it can be done, the present Practice is to fold, and cart-dung on this, as well as Chalk and Sands ; and then, as they are kerning Grounds, will return often the best of Crops. Turnips footed, about twenty-four Hours after they are up, will be entirely secur'd from the Fly. Sheep-Dressing, by the Fold, is one of the best of Dungs, and agrees with all Sorts of

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of Earth. It is true, that Summer-folding is certainly the best; but, when Conveniency will allow, I am for Winter also: As they do, in some Parts of *Surrey*, fold none in Summer, only in Winter; this is where they have a Crop on the Ground every Year, and where the Earth will allow of it; for their greasy Wool, the Heat of their Bodies, their Dung and Stale, will nourish the Ground at all Times. And, for this Purpose, I have Racks, thatch'd or boarded in the Winter, to keep their Straw or Hay dry, and moved daily with their Fold. I know two Farmers have attempted the folding of Hogs, with strong Hurdles, but were tired with the Mischiefs they otherwise did. One had a Crop of Turnips bitten by Cattle that broke in; the Owner finding they were like to rot, ploughed them in, and had a great Crop of Barley on the same, which enriched the Ground. Some Time after, another folded on his Turnips as soon as sown, and had an excellent Crop.

Burnt Clay. With three or four Pecks of a Mattock, the whole Ant-hill will come out like a Core. A few Wheel-barrows full of this Earth, may be easily fired, with the Help of a little Brush-wood, or Sticks; but Care must be taken, that Vent is not given to the Fire, which is done by throwing Earth on where the Smoke comes through; so may you increase it into a
G 2 round

round Body, in the Summer-time, till as big as you please. When you have fired about three Loads, you may put on your Clay, a little at a Time, with the Shovel, and the Fire, by Degrees, will bring a red, or other Clay, or Flint-stones, into an Ash, or Powder; which certainly is a most excellent Dressing, for any Grain or Grass. About forty Bushels sows an Acre, by the Hand, out of a Seed-cot; and harrowed in with Barley and Grass-Seeds, does vast Service. I had it burnt for a Half-penny, a heap'd single Bushel. Others get six or eight Loads of Clay, cut into Spits, about as thick as a Brick; let it be pretty well dried in the Sun, and having made a Heap of Furze-Faggot, Billets, Coal, or other Combustibles, laid one upon another, about as big as a little Bonfire, in a pyramidal Form, bring the Spits of Clay, and lay them round the same, two or three Spits thick, leaving only Room to put in the Fire; and then light the same. The Clay, by the innate Heat of the Wood, &c. within, will soon take Fire, and as it advances outwards, still lay on more Spits of Clay, placing them in such an Order, so that the Fire may be pent up within the Heap, and never suffered to get out; for if you do that, your Labour will be lost, and you must begin again. After you have burnt up your six or eight Loads of Clay, which is a little dry, the Heat which is within, will be so great, as that it will fire any Thing;
and

and then you may lay on the Clay green, as it is dug out of the Pit, being always watchful to keep a new Addition of it, laying on one after another ; but not too fast neither, lest you smother the Fire, and put it out that Way: This you may enlarge, and spread out at the Feet, as the Heap swells; and, if Occasion be, there may be Stages of Boards laid, on which the Men may stand, who place the Spits of Clay. This being done, and the Fire kept continually in, and watch'd Night and Day, you will soon have as large a Heap as you please, for the Improvement of Land ; for the larger the Heap grows, the easier it is to burn the Clay. This is a most cheap Dressing, and not only agrees with all Sorts of Lands and Situations ; but also laid about the Roots of young or old Fruit-Trees, pretty thick, enlarges, multiplies, and accelerates their Fruit ; and is proper to sow over all Kitchen-garden Ware.

Hog-Dung is reckoned the best, to put on Barley-Ground, just before sowing, and ploughed in ; it is most efficacious, taken directly out of the Sty or Yard, and carry'd to the Field. This, as well as Cow-dung, is reckoned a cool Manure ; and, therefore, best suits Gravels or Sands.

Pits are often made use of, to throw in Horse-litter, and other Stuff, in order to rot ; but this is a Mistake, for these Pits rather prevent it. Lying on level Ground, and often turning, furthers it best.

Sand laid on, and mixed with Clay-ground, shortens it, and makes it more fertile, as does Clay with Sand.

Cover over Dungs and Ashes, keeps in their Salts, which otherwise would be wash'd out by the Rains, and exhausted by the Sun and Air. And, under this Cover, crude Earth may be brought, and trampled on by Sheep, or other Cattle, in the Winter, and so enriched as to become good Manure.

All Sorts of Salt Dressings, from the Sea, which in some Places abounds with Plenty of them, as I have seen on the Coasts of *Devon* and *Cornwall*, as their Sea-weed, or Ore-weed, which grows at the Bottom of the Sea, and is tore up by rough Weather, and cast on the next Shore, wherewith they make a Compost for Barley-Land; also their Snail-cod, from deep Rivers, and Oyster-shells; which last Sort being only Salt congealed into such a Form, will, after two or three Years, when the Weather has dissolv'd them, mix with the moist Land, and do a great deal of Good, for several Years after.

Fowl-Dung challenges the Priority of all other, whether Pigeons or Hens, a Load of which is reckon'd worth ten of others, and is generally laid on Wheat and Barley, after they are sown, which we call Top-Dressing. But, with Barley, I think it is better harrowed in. Others mix it with Sand-mould, Chaff, or Dust, to take off its fiery

fiery Nature. This Dung, laid on the Roots of Fruit-Trees, does Wonders; and of no less Value is it to Asparagus-Beds. Goose-Dung, or any other Fowl-Dung, is excellent; but more, if mix'd with cooling Earths, and let lie to rot and putrify under Cover. This Cover is most serviceable to feed Sheep, or other Cattle under, in Winter, whereby they make their Dungs go abundantly further, especially if mixed with Straw or Earths. In *Holland*, they say, they save their Cow-Urine as their Dung; for Urine of Beasts, as well as Man's, is a great Fatner of the Earth. Human Ordure is a rich Soil, if mix'd with Straw, exposed to the Weather, and let lie to rot. *Ashes* of Coal are esteem'd much beyond Wood Ashes, and are sold for 4d. per Bushel, thirty Miles from *London*. Wood-Ashes are next, and both produce Honey-suckle Grass in Meadows, in abundance, if laid on about *Christmas*, forty Bushels on an Acre. I have, chiefly by their Help, cur'd several Fields of Moss, to which they are an utter Enemy; and the sure Way to make them efficacious, is to put eighty Bushels on an Acre, as I have done. But Ground should not be dressed twice together with them, but once with Dung, and the next with Ashes. Ashes made from Straw, is the worst Sort of all. *Soap-Ashes* are of great Worth, on plough'd Ground, or Meadow, laid on the Beginning of Winter, that

the Rains may wash them in. Of *Common Salt*, a Bushel was sowed on a Patch of barren Ground, which remain'd a fresh and green Swarth, a long Time after. And, when the Duty was taken off, answered on Land, either sown by the Hand alone, or mix'd with Sand-mould, Ashes, or Fowl-Dungs. *Rags*, for their warm Nature, chopt small, and sowed, and ploughed in warm, light Ground, will do great Service. Also Hair of Hogs, and from the Hides of other Beasts, does good, thinly laid on the Ground ; as do Coney-clippings, and Hoofs, chopt small, benefit Gravels vastly, by their long Duration in this hungry Soil. Grounds of Barrels, and Blood, dug in at the Roots of Trees, are great Enrichers, as is any Sort of Carrion. All these Dungs are made more improveable, by mixing, and digesting together, under Cover, than if laid on directly new: For, certainly, one Load of rotten Dung is worth treble the Quantity of new, hollow, and unrotted Dung. And our common Way is, to draw out the Yard Horse-litter, and Dungs, in the Spring, after the Lent-Grain is sown and put into a Clamp ; which, covered on the Top and Sides, with Parings of Earth, will prevent the Sun and Wind attracting, and driving from it, much of its Virtue: For, the better cur'd your Dung is, the better will be the Crop ; and an Increase in your Crop, will make an Increase of your Dung, and so

so *ad infinitum*. On the contrary, a Decay in the Dung, creates a Decay in the Crop, from whence arises the Ruin of Farmers and Landlords.

White Sand, is only fit for Fir, or Pine-Trees. *Yellow Sand*, something better, will bear Buck-Wheat; the Haulm whereof being ploughed in, will be a great Dressing for other Wheat, as before directed. It is also a great Preparation for Turnips, Peas, or Carrots; as also for Potatoes, if it is not too wet. Lucerne does excellently well in this Soil. The wet Sands will do for Cow-Grass, or white Clover, or Rey-Grass, mix'd together, will be a lasting Crop: Six Pounds of Clover, and one Bushel of Rey-grass Seed, sow an Acre. If too wet, Alders, Arbeles, or Sallows, will soon pay well. These, as well as black Sands, are excellent Manure for clay Grounds.

Gravels, if fresh and in Heart, will bear good Peas; also sweet Turnips, but small. This Ground is also good for Flax; then let Buck-wheat follow; and after, Oats; and where Dungs are scarce, an Author says, this Method will supply. In *September*, mow Fern; or, if that can't be had, young Furze: Lay it a Foot thick, on the Ridge you intend to plant Potatoes upon; cover them at the Bottom of the Furrow, where the Plough doth not come, with Virgin-Earth, half a Foot thick all over, and so let it

it lie till the first, or Middle of *March*, then dibble in the Potatoes, about nine Inches asunder, all in Rows over the Bed; and when in the second Leaf, cover them with Mould an Inch thick, which will destroy the Weeds, and make them very productive. All these Ridges being made fat and mellow with the Stalks, the next Year will bring excellent Grain, and for two or three Years together.

The *Sandy Loam* is one of the best Soils for Corn in *England*, and, indeed, for any Thing else, where it happens to be deep enough, as six or seven Inches; 'tis admir'd for Carrots, Parsnips, or Turnips. If this Soil lies shallow, sow it with Lucerne-grass, or Trefoil. Loam is not of such a hard Texture of Parts, as to resist the Roots of any Plant, like Clay, or receive them too soon, like Sand; both which are Faults in Soil: For, considering the divers Sorts of Plants we must cultivate, as well the tender-rooted, as the hard-rooted, we must have light Soil for the first, and strong is more proper for the last. But this being somewhat less free than the Sand, and less tenacious than the Clay, all Plants will agree well enough with it, and every Sort live an easy Life therein, or make their Way, like the middling People in a Nation, by slow and sure Means; while the hot-headed, like Sand, are too speedily overthrown in their Attempts; and the too grave, like Clay, are never of any Use till they

they are stirred up. Where the Loam is too wet, and cannot be drained, it will bear Hemp. In this Soil the everlasting Pea will grow: It affords excellent Fodder for Cattle, it may be cut three Times in a Summe. This Soil, with the help of the Cleanings of Ponds or Ditches, will bear good Hops: And it requires the least Manure of any other.

Marl is accounted one of the best Improvers of Land, but not of itself to be good for any Thing; yet if People knew better what *Marl* was, they would find it upon the Surface, as well as in Pits, as it may be seen in many Places of several Colours. When 'tis yellow, some call it Loam; when 'tis white, 'tis called Chalk; and when 'tis blue, 'tis a blue Marly Ground: But when we dig for it, 'tis all *Marl*; for there are *Marl*-Pits common of all these Sorts. But if they are dug deep into the Ground, they must have Time to lie above it, and imbibe the Air before they are made use of. After this, 'tis either broken again by flinging into the Cart, or by spreading or ploughing, so that the Parts are more capable to receive the Air. For if we take *Marl* fresh out of the Pit, and sow the Seeds most familiar to it, they will not grow upon it; but let it remain some Time in the Air to mellow, it will bring any Seed to Perfection. With this Notice, any one may know what I mean, *i. e.* *Marl* is a proper Soil for any Plant,

Plant, when it has had Earth enough to mellow it, and is deep enough to receive the Roots. According to this Notion, is the Mud of Ditches or Ponds more or less better'd, which certainly is much improved when divested of its crude, raw Quality; therefore 'tis surely good Husbandry to mix it with Chalk, Lime, Sand, Litter, Horse-dung or Ashes, and being more than once turned and well mixed, will sooner incorporate with the Earth it is to dress, and thereby become much more fertile. Marl, as well as any other free and open Earth which is taken under the Turf, and below the Surface, as it is supposed not to have borne any Crop that has not in the least been divested of any natural Power, is judged to be that which the Reverend Mr *Lawrence* calls Virgin-Earth; which, if of the best Sort, is full of Riches, and of the greatest Production of any Earth whatsoever. This is that which most plentifully abounds in *Sal Terræ* or the *Spiritus Mundi*, by Reason of its being covered by the Turf, and so defended against the Exhalations of the Sun and Air; as are Bottoms of Cellars, Stables, Barns, &c. and in some Measure are Woods: Which makes that Sort of Earth so extraordinary prolifick when it is sowed with Grain, after the Wood is stocked up. And all Clover upon the Ground conduces to the Conservation and Increase of this Spirit; for which Reason,
Sheep-

Sheep-folding all the Winter under Cover, in my Opinion, would be of great Importance to the Ground, and little behind that of Summer. I will suppose it to be performed in this Manner, to answer the Purpose :

For forty Sheep place three Hurdles on every Side, so that twenty-seven Feet square should be so taken in ; let there be a Ruler or Pole of that Length, each End resting on another, (by a Swivel) of about eight Feet high ; which should likewise have a Brace at each End, to help the better supporting the long Pole, and a Foot to support that, and to make them thereby easier to remove each Night. Across this long Pole a Tarpaulin or other thin Cloth may be laid on two or three Ropes to bear it, which should be tacked to the Hurdles on the Sides, and which should be drawn with Straw-bands to keep out the Weather. Under this, or some such Contrivance, the Sheep would feed their Meat dry out of the Rack, and which by one Man may be shifted each Night they are folded ; and by this Method the Sheeps Dung and Stale will become more fertile by the Cover of the Straw or Hay that they pull under their Feet. So does Snow enrich the Earth, as is apparent to vulgar Observation, not only by covering the Earth to preserve its Spirits in itself, but by the nitrous Spirit it leaves in the Earth,
after

after its Solution. And for this very Reason does stony Ground produce such good Crops of Corn, which has been proved by taking the Stones away, and the Corn has not proved so well. That this Spirit of the Earth hath in it a sensible Heat as well as Fertility, we may perceive by Springs in great Frosts, when the Pores of the Earth are shut, the Body from whence these Springs flow is warm. On the contrary, when the Pores are open, and this Spirit wasted and transformed into Vegetables, Animals, &c. and exhausted by the Heat of the Sun ; then is the Body internally cold, as we sensibly perceive by the Waters in Wells in the Summer-Time.

By the true Knowledge of this, a Gate is opened to propagate, maturate, or advance the Growth or Worth of any Tree, Plant, Grain, Fruit, or Herb, to the highest Pitch Nature admits of. And, as a learned Author observes, this Globe of the Earth that affords unto us the Substance not only of ourselves, but of all other Creatures sublunary, is impregnated with a Spirit most subtile and etherial ; which the Original or Father of Nature has placed in this World, as the Instrument of Life and Motion of every Thing. The Spirit is that which incessantly administers to every Animal its Generation, Life, Growth and Motion ; to every Vegetable, its Original and Vegetation : It is a Vehicle that carries with it the sulphureous and saline Parts, whereof

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whereof the Matter, Substance, or Body of all Vegetables and Animals are formed and composed. It is the Operator or Workman, that transmutes, by its active Heat, the sulphureous and saline Parts of the Earth or Water into that Variety of Objects we daily behold or enjoy. It continually perspires through the Pores of the Earth, carrying with it the sulphureous and saline Parts, the only Treasure the Farmer seeks for ; as hath been by some ingenious Artists mechanically proved, by receiving the same, between the Spring and Autumn, in an Alembick or Still-Head where it hath condensed and copiously distilled into a Receiver at that Season of the Year ; the Earth then more liberally affording it, than in the Winter-Season. Which spirituous Liquor so received, is not a Treasure to be slighted or neglected, carrying with it the only Matter of Vegetation ; as the same Artist affirmed, and having placed the same under a Melon-Glass near some Vegetable, it was thereby wholly attracted externally and converted into that Vegetable. It is easily obtained, and that in great Quantities, by such who think not a little Time and Labour lost, to search into the Mysteries of Nature. But whether we obtain it singly or simply, or not, this we know, it is to be received by placing the most natural Receptacles, the, Seeds, Plants, and Trees, in the Earth, which gives it us transmuted into
such

such Forms and Substances, as are most desired and necessary. Water contains in it the most spirituous or aqueous Part; Plants, Flowers, and Soils, more of the sulphureous; and Barks of Trees, Blood of Animals and several Minerals, more of the saline, which three Qualities are more or less in all things. How soon will Horse-Hairs receive Life, lying in Rain-Water but a few Days in the Heat of the Sun, in the Spring-Time? Whereof many may be seen in the Highways after Rain in the Month of *May*, very nimble and quick, that had not yet lost their Shape of a Horse-Hair.

Neither is the more sulphureous Part capable of yielding Vegetables, being of too hot and pungent a Nature, as the Dung of Animals that eject no Urine, *viz.* the Volatiles, unless commixed or allayed with some other Matter abounding with the other Principles, or that it loses its too fiery, destructive Nature, by being exposed to the Sun and Air until it be evaporated; then will it emit several Vegetables, the Growth of which will be accelerated and brought forward by the Assistance of Rain or other Water, which has in it a Portion of this Spirit of the World; and by the Help of Water the Earth is qualified better for its Perspiration. That this Subject is the very Essence of Vegetables, and that from it they receive their Substance, and that from Water only, is evident in such
Places

Places where Vegetables are not permitted to grow, and where it cannot vapour away, nor is exhaled by the Sun or Air, as under Buildings, Barns, Stables, Pigeon-Houses, as I said before, where it condenses into Nitre, or Salt-petre, the only fruitful Salt, (tho' improperly called so,) not generated, as some fondly conceive, from any casual Moisture, as Urine in Stables, &c. though it is augmented and increased thereby; but meerly from the Spirit of the World. Lands therefore resting from the Plough or Spade are much enriched only by the Increase of this Subject, and this is become an ordinary Way of Improvement; witness our several Lays of natural and sowed Grasses, which return such profitable Crops of Corn on the first Sowing after they are broke up. This Effence is in all Ashes, which otherwise may be called the fixed Salt, caused by Calcination, as the Lye or Lee of Ashes may be boiled till a Salt is found at the Bottom of the Kettle or Copper; which indeed is the true vegetable Salt, and is in all Lime, burnt Earth, or Clays, &c.

Common, crude or single Salt, if strewed on the Ground, is thought by some not to improve, but corrode and burn it; but they say, Lime is better: Yet they agree in this, that the Coupling of these male and female Salts makes a high Improvement. Indeed, they do not produce a long Grass for the Scythe, but for Pasture; and it will be so thick, short,
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and sweet, as to grow all Winter; nor are their highest Grounds parched in the hottest Summer, by reason of the Honeyfuckle-head which shades its Roots. And if the Sea or Common Salt is too lusty and active in itself, the Lime has a more balsamick and gentle Salt; which being directly joined and mixed with the other, is thereby invigorated, and becomes more powerful.

Ploughing of Ground is of such absolute Necessity in all Lands, where Corn and artificial Grasses are sown, that whoever is wanting in this Work to get the Earth into a fine, hollow, sweet Condition when it is sowed, may depend on it, that they stand a sorry Chance of having a plentiful Crop of either; nor is it often ploughing the Ground that will do, if it is not ploughed deep where the Staple will allow of it: Therefore the Two-horse Farmers seldom cultivate the Ground as it should be, because their Strength renders them incapable of doing this Work to the Purpose, besides the many other Inconveniences that attend the same. As in dry Seasons, in Gravels especially, they are obliged to lose their Opportunities of ploughing, because their Strength is not sufficient to do this Work to the Purpose, nor can their Shair-Point penetrate deep enough to eradicate, nor their Coulter run thro' the many potent Weeds that many Grounds are infested with, which is often the Occasion of the Loss of most Part
of

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of a Crop; for if only a Camock-Root will set six Horses sometimes, what Chance has a Pair with such a strong Weed? 'Tis therefore a Farmer's Interest to keep a Horse extraordinary, if his Conveniency will let him, to help him thro' these and many other Difficulties; that is, if he has but two, to keep a third; or more.

When Land is thus ploughed well, and the Weeds killed, then is there greater Room, for Manures and Dressings, which in weedy Grounds help to multiply and enlarge their Product, and often is the Cause that such Weeds spoil the Crop; and for this Reason some judicious Farmers won't put their Dung on the former Part of the Summer, but will stay till just before the last Ploughing is made, to sow Wheat, that the Dung may not nourish Weeds, which it will surely do, when ploughed in with them in foul Ground, as is too commonly seen, especially in wet Loams and Clays; and therefore it is, that these Sorts cannot be ploughed too often, when Sands, Chalks, and Gravels can't be too seldom. It was the Case of my Neighbour, in a Ten-acre Field, to plough about nine Acres of the upper or hilly Part of it, several Times, to get it into a fine Tilth for sowing of Wheat, on a true loamy Soil; but the tenth Acre being a sharp Gravel, lying on a Level at the Bottom of the rest, he gave it but one Ploughing, and that only before he sowed it with

Wheat and folded on the same: This proved right Management, for if he had ploughed the gravelly Part oftner, the Rains would have washed the Mould from the Stones, and made it poorer: Besides, one Ploughing would bring such Ground into a Tith as soon as two or three would a Clay or Loam.

CLAY S.

WHITE CLAY, as an Author observes, is called in many Places soft Chalk; it will bring very good Corn, by being well ploughed and manured with Fold and Dung-Cart, or with black Sand or heathy Ground, or Turf from low Grounds, or Fern mixed or rotted with drift Sand. It will bear, after the Crop is off, the *Flanders* Spurry, which is frequently sown to fatten Cattle, and cause good Store of Milk; it is also a good Fatner of Fowl, and will make them lay great Store of Eggs early in the Year. This Soil, says the same Author, will afterwards bring a good Crop of Lentils and also good *Dutch* Clover.

But notwithstanding what he affirms, I know where they could never rightly obtain a full Crop of Clover in the chalky Ground, which obliges them to sow Trefoil; this indeed succeeds to their great Profit for Sheep and Cows, when no other Grass (as they

know

know of) will grow to any Purpose there. It frequently happens that the chalky Grounds near *Ivinghoe*, about two Miles from me, bear sometimes eight Loads of Wheat on an Acre, by their double Dressings; which of late has encouraged them to plough up the Sides of great Hills to come at the dry, chalky Ground. Barley, Oats, and Peas, by this Means will be vast Crops, especially in a wet Summer, not inferior to their rich, black Vale-Soils. But this Soil is not without some Inconveniences attending it; so that in the Winter by the Frosts it is apt to shoal, and by the Air blown, and by the Rain washed away from the Roots of the Corn, so as to leave it naked, and thereby kills a great Part of it. To prevent this, they roll it both forward and across the Stitches, or broad Land, and likewise fold on it sometimes after Sowing.

The reddish Clays, and indeed all others, are best for Wheat; but also the red Clay in particular will not answer in Lent-Grain, without the Help of Chalk or Sand.

A Person ordered his Servant to plough up the Wheat-stitch of this Sort of Ground, in order to get it into a Tilth for Barley the next Spring, and said he would dress it very well with Cart-dung. The Ploughman's Answer was, that if he did so, or double-dress it, the Ground would not recover it in ten Years: For this Clay-Ground, will not admit of cross Chopping without the Help

of Chalk, which sweetens it, and keeps it light, when otherwise it will become sour and clotty, and bear nothing to the Purpose. But Gravels, Sands, and dry Chalks, if they are dressed well, and got into a fine Tilt, will bear cross Chopping, even every Year, without Chalking, but better with.

Red or Yellow Clay is commonly called the best Wheat-Land, and for Clover; but Lent-Grain and most other Grass-Seeds do not prosper to any great Account, except the *Poland Oat*, which I have been forced to reap off such Soil. Woad, they say, will bring valuable Crops on this Sort of Earth. Turnips will grow here to a great Bigness. This Sort of Ground is as much mended by gritty Sand, as Sand is by Clay. And where two Neighbours exchanged Soils with each other, their barren Grounds were made quickly fertile, even from 1 *l.* an Acre to 40 *s.* The first Year after thus mixing the Ground, they set Beans on two Ploughing, and had a very good Crop, directly on that they sowed Turnips, and fed Sheep. In the next Spring following, they ploughed and sowed Bullamon, which is Peas and Oats, and brought a great Crop; since that it has borne very good Wheat. Upon this Sort of Clay, Ash, Oak, Beech, Pear-Tree, Apple-Tree, Cherry-Tree, and Fir will grow prosperously, as will Walnuts and Beech on the Chalks.

This

This Sort of Ground is very apt to be sour, and run with Twitch-Grafs ; therefore good Ploughings are best, especially by turning it up in sharp Bouts, for the Frost to shoal, and the Sun to mellow. On the clayey Loams, the former Practice of sowing naked Clover is much laid aside, because single Clover is apt to give Room to the Twitch-Grafs to grow among it; nor is it of itself so great a Sweetner of the Earth, as when mix'd and sowed with Trefoil ; then it is of more Potency to kill Weeds, by Means of their great spreading Cover. When the Dung is laid on in *March* or *April*, and the Weather will permit, plough it in, not above three Inches deep ; and when it begins to dry, give it another Ploughing, an Inch or two deeper, which will mix the Dung or Manure, laid upon it, before the first Ploughing, and so make an extraordinary Reduction of the Stiffness of the Clay : After this, it may produce a great Crop of Turnips. Some commend this Soil, for the planting it with Pear-Stocks, and so let them grow in the Manner of Coppice-Wood ; for that it will prosper so well, that, at five or six Years End, it may be cut for Fences, Stakes, Implements, and Fire-Wood.

BEASTS.

COWS are reckoned to pay about 4*l.* a Year, clear Profit, by the Vale Graziers, either by suckling Calves for the Butchers, or by making Butter and Cheese, or by fattening the Beast for the Butcher. 'Tis true, there have been some Cows that paid 5*l.* or more ; but, one with another, this is the common Computation: But certain it is, that no one knows what a Cow will pay, unless she has her constant Bellyful of requisite Meat. The Gentleman, in Mr. *Bradley's* Monthly Book for *May*, says, that a Cow will give three Gallons of Milk a Day throughout the Year, provided you keep her changed for a new-milch'd one, when she begins to fail, and then will return about 10*d.* a Day, in all 15*l.* 14*s.* 2*d.* a Year. I agree with him, it may answer in some Parts of *England* ; but what must be the Discount in changing ? I have often experienced, that if I give 5*l.* 10*s.* for a Cow and a Calf ; when she is dry, 55*s.* or 3*l.* is a good Price for her. So that if a Cow was to be changed every ninety Days, there will be, I believe, a Draw-back proportionable to my Calculation of 4 or 5*l.* a Year. Therefore, I rather agree with his Opponent's Account, which amounts to 5*l.* a Year ; *viz.*

a Cow, for the first ninety Days, will yield three Gallons of Milk; for ninety more, one Gallon; for ninety more, scarce one Quarter of a Gallon; and for ninety more she is dry: Thus, in a Year, a Cow may yield 384 Gallons of Milk, which will make two Hundred and a Half of Raw-Milk Cheese, and a Hundred of Whey-Butter, besides Whey for Swine; or else two Hundred of Butter, and one Hundred of Skim-Milk Cheese, besides Whey, as aforesaid, for Drink to the People, and Food for Swine: By this Account, the Profit of a Cow's Milk a Year, may be about 5*l.* Then, for making and selling Veal, I have suckled six Cows at a Time, and been engaged in the Method several Years, and could never find a Cow pay above 4 or 5*l.* a Year this Way; for I reckon she will suckle three Calves besides her own, and what Overplus happens in a Year, will only supply what she borrowed from other Cows, to help her in fattening the four Calves. I have also try'd what I could get by suckling Calves at 2*s.* 6*d.* *per* Week in the Summer, and 3*s.* *per* Week in the Winter, for the Butcher, he finding the Calf; but found myself no better off than the former Way: For, in this Case, he would buy in larger Calves than ordinary, on purpose to have his Pennyworths of Milk. Nor will this pay and defray, in the Dead of Winter, in any of the foregoing Cases; for then a
Cow

Cow will nearly, if not quite, eat 200 of Upland-Meadow Hay in a Week, which, twenty-seven Miles distant from *London*, we sell for 4s. But the Case is altered in the Vales and Marshes, where, by the Coarseness of their Hay, or the Remoteness of their Market, they can't make so much any other Way, as by Suckling; or where they come at Plenty of Grains, which is a great Breeder of Milk, but causes a swift Rot in a Cow, without a Plenty of Hay with them. Malt-Dust is a very good Thing to promote Milk, and is beneficial, where Grains can't be had; a double Bushel is generally sold for 12d. and is used thus: To one Cow give a double Handful in a Tub, pouring boiling Water on it, and so three Times a Day; this will make the Water, in a little Time, like a strong Wort, and will nourish much. Some Cows will take it directly, others must be fasted to it before they will touch it; but once tasted, they will devour it greedily. Raw Turnips, chopt or whole, are given by some; others will boil them to Mash, and give them with Bran mix'd.

Calves, the first Week, are allowed not their Fill, but afterwards as much as they will suck, because in the Beginning they are apt to scour, if they have too much Plenty; and all the Time we give them powder'd Chalk in a Trough, besides great Pieces hung up by them, to lick at Pleasure,
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in order to whiten their Flesh, make them suck, and keep them from being laxative; and if then they should scour (which hinders their fattening) we give them some Syrup of Sloes, mixed with Flour, and put down their Throat, by way of Cram, with a little Milk to wash it down. Many cram them besides suckling, to make Milk go the further, by mixing Wheat, or Barley Flour, with Milk, and dipping the Crams in Milk, when you put 'em down their Throat; others make use of ground Madder, others black Pepper in Urine, to cause a Drought, that they may suck the more; and keep them in the Dark, except when they suck, that they may be induced to sleep more than ordinarily, which, with bleeding often, helps them to fat the sooner. The Butchers, at the End of the first Fortnight, cut a Piece off the Tail; at the next Fortnight's End, they bleed them in the Neck; at six Weeks they do the same, and so on every Fortnight; it whitens their Flesh, and makes them fatter with less Milk. We give them Wheat-Straw, twice a Day, on a Layer of Faggots, to keep them dry; but in *Middlesex*, where it is not so plenty, they make Holes in Planks that lie with a Descent.

A Heifer will spring about three Months before she calves, but a seven-year-old Cow, only three Weeks; so that to know if a Heifer is in Calf in that Time, you may

may draw her Dugs, and if Milk or Corruption appears, she is in Calf. The Country-Maids commonly observe to dry a Cow of a *Sunday* Morning, and then she will always calve in the Day-time, as they say.

A Cow in middling Case, that is fed with Straw in the Winter, need not have Hay above a Month before she calves, for that she will give more Milk than if she had it longer; because the fatter the Cow, the less Milk; and yet, if too poor, it is dangerous, lest, as we call it, she falls in Calving: And, if the Season will permit, it is best to let a Cow calve in the Field or Yard, that she may have Room; nor is it so proper to house her one Night, if the Weather is good, because the Calf will be apt to butt the Bag, and so cause it to be snarl'd and hard: And, therefore, we commonly hold the Calf in a Collar and String.

When a Cow is bulled, as soon as it can be done, when she comes home, throw a Pail of Water on her Udder behind, and keep her up that Night from any other, because she will be apt to ride them, and so miss her Bulling.

If you would fat a Cow, that calved in the Spring-Time, dry her about the 10th of *August*, and then she will go near to fat with the After-Pasture. You may let her take Bull, or not, it is of no great Consequence; but Suckling fatigues Cows, more than Suckling

ling and Milking, and is apt to hinder their Bulling; but both impede their Fattening. And if, when a Cow is dried, her Udder gangrenes, as it often happens, the only quick Cure is to cut off her Dugs, and immediately drive her about; then, after she has bled heartily, anoint them with Hog's Lard, and she will do well: But this must only be done where the Cow is to be fatted directly on the same.

Some Cows will continue in a good milking State, till ten Years old; but after that, decline.

As soon as she has calved, throw a Handful of Salt on each Side of the Calf, which the Cow will swallow by licking it; this will cause her to glean very speedily. I know a Farmer that gives a cleansing Drink to the Cow, presently after Calving, as believing the Milk will not be right wholesome without it. Others, for Cheapness sake, give a Horn of Stale to her, and a Day or two after, another; this, they say, will keep the Garget out of her Bag.

Cows very much vary, not only in their Make and Shape, but also in their Bags, which obliges the Buyer, in particular, to have a Regard to them: Some have their Leathers thick and fleshy; others thin and lainge. The thick-leather'd one will often seem big, and give but little Milk, and that very hard to be got, when a thinner one shall give much more, and be easily milk'd; and, therefore,

therefore, when a Person is Master of a right Cow, it concerns him to keep her on ; for, I may say, I have found this Sort hard to come by. I have had a little Cow, with a good Bag, give much more than a larger one, that had a great deal of Leather, and little Milk : And, indeed, in our Chiltern Country, a large Cow seldom pays like a lesser one ; because, if they do milk well, yet must their Living be according to their Body, else they'll quickly lose a daily Quantity of their Milk, which is soon lost, but hardly (if ever) possible to get again that Season.

For a Cow that pisses Blood.

Take Oak, shave off the outer Bark, and boil it in Spring-Water, till it be red ; also Comfrey, Shepherd's-purse, Plantain, Sage, green Hemp, or Nettles, of each a good Handful, and boil them with the Bark ; strain it, and put a good Handful of Salt in the Water ; also some Allum, Bole-Armoniac, Chalk, or the Powder of Sea-Coal. If your Beast is weak, give only a Quart, or scarce so much ; but if strong, more : Once often serves, but twice will surely cure the Beast. Give it lukewarm.

Another. Toast a Piece of Bread, and cover it well with Tar, and give it. It's occasion'd, some say, by their brouzing on Oak-leaves, &c. A Frog put down a Cow's Throat,

Throat, and she immediately drove into Water, will directly piss clear. It's a present Cure.

For the Blain in Cows.

When first taken, they will stare and foam, with their Tongues out of their Mouths; then immediately prick her in the Nose, or blood her in the Neck, which will keep her alive twenty-four Hours: Then take a Handful of Salt, in about a Pint of Water, and give it her, then directly ram a whole Egg down her Throat. Sometimes they have it behind, under their Tail, when a Blister will appear; this is cured by running a Hand down her Fundament, close-finger'd, and brought wide out, which breaks the Blain within; if not discovered presently, it kills them in half an Hour sometimes.

For the black or red Water in Cows, a Distemper next to the pissing of Blood.

Take a Piece of Iron, heat it hot in the Fire, and put it into two Quarts of Milk; after let the Milk cool, and give it the Beast blood-warm, and it will bind up the bloody Issue, after two or three Times giving *.

For

* See the *Practical Farrier*, containing 200 Receipts for the Cure of the most common Distempers incident to Oxen, Cows, Calves, Sheep, Lambs, Horses, Hogs, and Dogs. Price 1 s.

For a Cow that strains in Calving --- when their Calf-haulm, Udder, or Bag will come down and swell, as much as a blown Bladder.

Take new Milk, and strew thereon Linseed bruised to Powder, or Chalk, or Pepper, but Linseed is best; put it up with your Hand, and let her hinder Part stand higher, for two or three Days, than her Fore-part.

For a Cow, who, by lying on the Earth, and too soon drinking cold Water after Calving, her Calf-haulm swells and lies over the Neck of the Bladder, stopping the Urine that she cannot stale, or stand on her Feet.

Take two Sacks, or a Window-cloth, put it under her Body, fasten a Rope to it, and put it over the Beam of the Barn, and draw her up, that she cannot touch the Ground with her Feet; then let a Woman anoint her Hand, and work the Calf's-haulm from the Bladder, that the Water may have a Passage; give her warm Bedding, warm Drinks, and warm Cloths.

For a Cow that cannot glean.

Take Germander and Pennyroyal, boil them in a Quart of Ale, then strain it, and put

put therein a little Saffron, and give it her to drink, and it will bring it away in two or three Days. Others will give two Ounces of Flour of Brimstone, in a Quart of new Milk warm'd.

To feed Calves whilst they suck.

Put into a Trough, Barley-meal, and it will whiten and fat. Some give them Oats, in Troughs, all the Time of their Suckling; and the Night before they have them to Market, cut off a Piece of the Tail, and tie it up with a Shoemaker's End, and when at Market, will give them a Cram or two of Flour mix'd with Claret, to keep them from Scouring.

To cure Swellings, or Snarl'd Bags of Cows.

Take Rue and Adder's-Tongue, stamp them together, and squeeze out the Juice; this mix with a Pound of fresh Butter from the Churn, without Salt, and make into an Ointment.—This is a most excellent Receipt, as I have often experienced.

Another Receipt to make a Cow glean.

Take a large Handful of Pennyroyal, and boil it in three Pints of Ale; then strain
I it,

it, and put one Pound of Treacle into it, and let it just boil; take it off, and put an Halfpenny-worth of Flower of Brimstone to it, and so give it, in a Horn, to the Cow. Some, instead of Pennyroyal, put in Southernwood.

Horses. Our Farmers hereabouts commonly go to *Thame* Fair, on *Michaelmas-Day*, and buy the yearling Colts, for about two Guineas a-piece, which they turn into their *Latter-Math* for that Winter, and give them some Hay; two are best, for their Company's sake: And the next Spring, about the Beginning of *May*, put them into the Vale about *Aylesbury*, for a Shilling, or Eighteenpence a Week, and so raise fine Horses at a cheap Rate. And, as to their Management and Cure of their Diseases, I think *Gibson's Dispensatory*, and his other Books, are the best that ever came out on that Subject. I shall therefore only take Notice, that for the Farcy, what I mention also for Sheep, is a most excellent Receipt.

Steep the *Regulus* of Antimony in Ale, with a little of the Spice, called Grains of Paradise, and a little Sugar; of which give a Horse about half a Pint at a Time, two or three Times, with a Day or two's Intermision between each Time.

Swine

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Swine are generally of two Sorts, the small, wild, black *China*, or *West-India* Breed, and the great *Leicestershire*. Between these are also several Sorts and Mixtures. The first, indeed, makes delicate sweet Pork, or Bacon, also pickled, is most dainty Food; they fatten for Pork in about three Weeks, and for Bacon in Proportion; and I have known them to weigh near twenty Stone, when killed for Bacon. The great Sort will sometimes weigh fifty Stone. I give mine Antimony, in Powder, as much to each as will lie on a Shilling, two or three Times a Week, in their Wash, or among Peas, which gives them a Stomach, and preserves them from the Garget and Measling.

Sheep are the most necessary and beneficial of all other Beasts, upon a Farm, and where they are not kept, a Tenant's Destiny may easily be read. The Rot in Sheep, is the greatest Misfortune belonging to them. It is caused by too much Moisture, by Water and Snows, which by their Weight and Dissolution, mix and wash the Grass in with the Earth, and so cause a Froth or Scum, which the Sheep, through Hunger and Novelty, greedily devour to their Destruction; it is also occasioned, in the Spring or Summer, by a Putrefaction in the Air or Grass, especially in the Vales and Marshes, and is known, oftentimes, by the Cobwebs on the Ground and Hedges, which hold a Wet, or Moisture,

and are of a poisonous Nature; therefore, the Farmers, particularly in the Vale, don't unfold them till Nine in the Morning, that the Sun may dry them on the Grass. They are also kill'd, by Means of a red Water, or Serum, that is occasioned by too much Moisture, and sometimes die by eating the Glow-Worm, or Canker-Worm, as some call them.

To prevent then the Rot, or Red Water, some, even at *Midsummer*, will give them Straw or Hay, which has saved many a one, when others about them have died, that did not eat dry Meat. A Gentleman, near me, bought a Parcel of the large *Oxfordshire* Pole-Sheep; several of them dying of the Red Water, the Shepherd gave the rest Hay, in the Fold, and saved them. Rotten Sheep will, in the Beginning of the Rot, fatten sooner than sound ones; and the Way to know them in the Market, (which they are generally brought to, so soon as discovered) is to feel the Cod of the Wether, and if there is on it a dry Wax or Scurf, he is rotten; but if moist and wet, he is sound. And so the Ewe will be between her Legs. Also, if the innermost Part of the White of the Eye has Streaks of Red, it is a Sign of Soundness; but this is often forced, by putting before-hand, Pepper into the Eye, which will fret it into a Redness. Also the Gums and Mouth of a rotten Sheep will be white.

There

There were many Sheep died rotten one Winter, in the low Meadows, about *Thame*, in *Oxfordshire*, by Means of a white Froth on the Ground, occasioned by the Fall of great Rains, and also by Means of the Dirt, or Sullidge, that wash'd from the highest Parts on the lower, that tainted the Grass, and did the Damage. It's true, the Rot was not very much this Winter, in Comparison of some that have been, and therefore the easier cured: But had my invaluable Receipt, hereafter-mentioned, of the Regulus of Antimony, been duly applied, and my other Items been observed, undoubtedly there had not so many perished. Nor would there be such a Number of Misfortunes happen to Horses, Hogs, and other Cattle, as perpetually do, if the right Use of the several Preparations of Antimony were more known and practised.

To prevent and cure a rotten Sheep, that is not too far gone.

Take Bay-Salt, and stamp it well, and after the Sheep has fed a Day or two on clean, dry Oats, put some of it among them, and after that a greater Quantity, till such Time as they begin to distaste it; then give them clean Oats, a Day or two, and, after that, serve them with Salt as before. This Course being followed, until their Eyes have recover'd

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their natural Colour, they will be perfectly cured. This Meat should be given them in wooden Troughs, in Barns, and their Dung and Stale will answer the greatest Part of your Expence; but if you have not that Convenience, it may be given them in the open Air.

For the Skit, or Looseness, in Sheep.

Take Salt, Allum, or Chalk, and give it in Small Drink, or Water, and it will knit and help them presently.

Another Receipt to cure and prevent the Rot in Sheep.

Take the Regulus of Antimony, sold at the Chymists or Apothecaries, and steep it in Ale, with a little of the Spice, called Grains of Paradise, and a little Sugar; give it two or three Times, with a Day or two's Intermission between each Time. To a Sheep, give about two or three Ounces at a Time. This must be done in Time, before the Liver is too much knotted, and that may be partly known, by killing one or two, by which a Judgment may be made of the rest.

But, as the Proverb says, *The obstinate Man seldom wants Woe*; so I have known several who have lost their Flocks by their Indolence, and kept them on, in Hopes of their knitting and recovering

recovering by the Alteration of Weather, when they might have disposed of them early, and lost but little by them: Therefore, I doubt not but these Receipts will be of singular Use, when publickly known, in being a Means to prevent this Loss and Trouble. For this Regulus of Antimony is a universal Remedy for most Diseases in Men and Beasts. It is a Chymical Preparation, made with crude Antimony, Nitre, and Tartar, and corrected by the Spice and Sugar. It also cures the Farcy in Horses, as aforesaid. Every Apothecary can give further Information of these most excellent Ingredients. The larger the Sheep, the less Power the Rot has; for the smaller ones are sooner overcome by it. In our Chiltern, hilly Country, the Western white-faced Sheep prove the best of any, because they come off a sound Lay of Ground, from the great Commons or Downs of *Wiltshire*, &c. But I knew a Gentleman by me, that sent down to the remotest Parts of *Wales*, for a Flock of hardy, sound Sheep, as, indeed, generally the *Welsh* are; and the Consequence was this: They being kept on Mountains, and at their full Range in open Places, when they were brought into Enclosures (notwithstanding they had a careful Shepherd) ran some one Way and some another, till a pretty many were lost. The Gentleman, on this, told the Shepherd, he should pay for them all, which so affrighted

I 4 him,

him, that he ran away too. The long, loose-wool'd Sheep are not so good as the Western close curl'd-wool ones are, because the first, after they are wetted, are sometimes a Week before they dry, to their great Prejudice ; nor are they of so hardy a Nature. It is a common Way for the Vale-Men, when they find the Rot has begun in their Flocks, to pay the Chiltern-Men, for letting them feed on their Commons a few Months, in order to knit and recover them, which, indeed, often happens, by the Change of the Air and Ground ; but even, where the Commons are not stinted or limited to a Certainty, the rest have brought their Action (or at least threatened it) against the Culpable, for their invading their Right of Common, by furcharging the Common with these Sort of Sheep ; so that their Cure, by these Means, is now generally hinder'd all over the Nation ; which, I presume, will make these Receipts the more acceptable. My good Friend and Neighbour, Mr. *Timothy Garret*, bought some Western Lambs, about *Allbollontide*, and turned them into his Orchard, where they grazed till the Snow fell, when they lay scratching after the Grass, and would not eat Hay ; by this he lost the greatest Part of them : And since he takes them into his Yard, and gives them Hay or Straw, so that they cannot come at any Grass, they live and do very well.

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A rotten Sheep, he says, he has, several Times, seen die with Plaíses in his Liver and Head; This Plaíse is a live Worm, about the Breadth of one's Finger-Nail, and feeds and preys on these Parts. Another Remark is this; at *Hudnal*, a Farmer had a Wether Sheep took with a Giddinefs, which increased so, that it could not stand; on this, the Farmer sold it for Eighteen-pence, to a poor Man, who immediately knock'd off that Horn that lay next the Ground, and there appeared a small Bladder, like that of a Fish, which he took out, and put a little Wool in the Place, dipp'd in Tar, and sew'd it up. This Sheep did well, and was sold afterwards for nine Shillings.

This, as well as the first Case, undoubtedly was occasion'd by the Corruption of the Blood in the Animal, which my Remedies beforementioned directly strike at, by warming, drying, and altering the whole Mass of Blood; and, therefore, if given in Time, by Consequence will prevent and cure these, and the like Disasters.

Another Receipt to prevent the Rot in Sheep.

Take a Peck, or better of Malt, and mash it, as though you would brew it into Beer or Ale, and make eleven or twelve Gallons of Liquor: Then boil, in this Liquor, a good Quantity of Herbs, called Shepherd's-Purse, and

and Comfrey, Sage, Plantain, Pennyroyal, Wormwood, and Bloodwort, of each a good Quantity, and boil them in the said Liquor very well; then strain them forth, and put a little Yeast therein; after that, put a Peck of Salt, and tun and put it up in a Vessel. Then give it your Sheep in wet Weather, after *April* comes in, seven or eight Spoonfuls a-piece, once every Week, if the Weather be wet; if it be dry, you need not so often: And thus continue till *May*, and after, as you see Cause, according to the Dryness or Wetness of the Weather. Give them, now and then, a Lick of Tar, mixed with *Herb de Grace* chopped, and it will cleanse the Bowels of much Corruption, and be healthful to the Blood.

Objection. It is said, that such Cover for Sheep in the Fold, as is beforementioned, will be too hot for them, as they are naturally a Beast the best arm'd against Cold, and that it has been fatal to several, on account of the severe Weather that they are exposed to, out of the Fold, and when the Folding is over for the Winter, in *February* and *March*.

To this I answer, That too much Cover may be as bad, or worse, than too little; but as the Vale Farmers, in some Places, lay some long furzen Faggots just within the Fold, and against the windy Quarter, I think it may do well. A great Farmer, by me, is going to draw half his Fold Hurdles with
Straw

Straw-bands, to break off the Winds, this Winter, from the Sheep in Fold.

TAME RABBITS.

TAme Rabbits are great Improvers of a Farm, by their Dung, which is sold here for Sixpence a single Bushel, trod in, and is chiefly used to harrow in with Barley and Grass-Seeds. They are more Profit, by far, in Hutches than in Pits. Their Season is from *Christmas* to *Whitsuntide*, and when their Skins are clear, without Spots, a single one is worth 4*d.* or 6*d.* The main Art of keeping these Creatures, is to preserve them from Tunning, or being Pot-belly'd; and, therefore, when fed with raw Grains, Hay must be always given with them, in a little Apartment of the Hutch, to dry up the Moisture of the Grains; and when fed with Bran, or other dry Meat, Greens must be given to answer their Drowth. Commonly we keep the young ones with the Doe two Months, and at five Weeks End let her take Buck, that the former Brood may go off before she knits, about a Week. Pollard, mix'd with Grains, or made into Paste with Water, and given three Times a Day, is very excellent Food for them. Ground Malt helps to recover the young ones when tunned; Barley also, just broke, is
very

very good. If a convenient Place can be had, to let young ones run in Cover, or out at Pleasure, they will thrive with less Meat. They mightily love to brouze on Pea-Straw, or green Furze. If Bran is given alone, it should be long Bran ; but, to mix with Grains, it should be short Bran or Pollard. I never try'd it yet, but am of Opinion, that *French* Wheat must be fattening Food for the young ones ; and when they are so, they sell best to the Higgler, at six or eight Weeks old. A Doe goes thirty-one Days ; and generally, one Tin with another, brings six, which, indeed, is enough for any one Doe to bring up and fat. The best Time to save young ones for Breeders, is in *March* ; and then, with good Meat, clean Usage, and close Attendance, they will take Buck about *Allhollontide*, and so enter the Season with the Sale of their first Litter. A Doe is reckon'd to pay 10s. a Year clear, and that her Dung will pay for Grains. Some there are that have gelt the Bucks, in order to make them larger and sweeter ; but as I yet never experienc'd the Success, I can write no further of it. The Sweetness, and good Relish of their Flesh, undoubtedly is a very desirable Thing, and then they are certainly more wholesome ; and this, in my Opinion, is to be obtained, first, by such Food as will occasion it ; as good Oats, Barley, Pollard, and fresh hearty Grains, Greens, and Hay : Secondly, by
keeping

keeping their Hutches thorough clean, and carrying away their Dung to some Distance. And, thirdly, by keeping them in a wholesome sweet Air. For all living Creatures must subsist by Air, and be better or worse affected by it, as it is good or bad; according to the Observation of a Gentleman, who said he never eat so sweet a one in *London*, as he did here; because, as he said, the Hutches were standing in close Places, and in a gross Air, which is apt to taint their Flesh.

The common Way of killing them by striking them behind the Ears only, is not so well, by Reason of the greaa Quantity of Blood that settles in the Neck, which by the new Practice is mostly prevented. As soon as they are struck with the Hand under the Ears, then immediately job a Penknife into the Throat, and give it a Lance towards the Jaws; this will let out the Blood till they become white.

Another Way is to kill them as they do a Turkey, by flitting with a Penknife the Palate of the Mouth: This is reckon'd the most cleanly Way of all.

Rabbits not only supply the Markets, but also serve a Family for Variety and at a Time of Necessity, which makes them more and more be bred in Hutches. But in my Opinion, not one in ten does this to the Purpose, and that for want of Management. The ignorant Man I have known give Wheat-Pollard

Pollard (which is the best of Food for them) with fresh Grains, and sometimes neglects the Mixture with stale ones, but there is not that Occasion for the first as the last ; for when Grains (which is their common Food) are stale, then the Pollard takes off the griping Part of them, which new ones are free from. The right Sort of Rabbits are also a principal Matter, for without them a great deal of Charge will be lost ; for it is the same with these as with Horses, or Cows, the best I can light of are those that are all grey, and a brightish Circle about their Eyes. This Pollard will, best of any Thing, prevent the young ones being pot-bellied.

PIGEONS.

PIGEONS have several Natures and Names. The Tame or House-Pigeons are called, Barbels, Jacks, Crappers, Carriers, Runts, Horsemen, Tumblers, and Great Reds. The Barbel has a red Eye, a short Tail, and a Bill like a Bullfinch. The small Jack-Pigeon is a good Breed, and hardy ; has a turn'd Crown. The Crappers are valuable for their Swell. The Carriers for their swift Return Home, if carried to a Distance. The Horseman-Pigeon is something of the Carriers Nature. The Tumblers for their pleasant Agility in the Air. The Runts for their good
Breeding

Breeding and bringing up their young ones. The Great Red for their Largeness. The Turn-Tails, for their turning them up almost to their Back. And the Black-Head is a white Pigeon with a black Head. Several of these are often preferred for their Beauty, but the most common are the Runts. Generally in about half a Year's Time the young ones may be paired, by putting a Cock and a Hen into a small Coop-Hutch, where sometimes in an Hour or two, and sometimes not under a Day, two or three, they will pair, which is known by their Billing and Cooing, the Cock's calling the Hen, and the Hen spreading herself before him. They breed almost all the Year, except Moulting-Time. It's common to cross-match them, and they'll breed the better; and should be fed all the Year, except Seed-Time and Harvest. The former holds about a Month, and the latter three, even to *Albollontide*. Some always give them Meat throughout the Year, because they say, before they'll be forced out to get their living abroad, they'll starve, some of their young ones. Others, as Farmers, will give them no Meat all the Year. These Calculations are for the Country, where Meat is plentiful at those two Seasons; and at others, at the Barn-Doors. Forty Pair is reckon'd to make about twenty single Bushels of Dung a Year, and is here sold for 10 *d.* the single Bushel heaped. It is said
this

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this Number, well looked after, will maintain a single Man. A Garret or Room about twelve or twenty Feet will contain that Number; too much Room hinders their Increase, as well as too little. They commonly hatch within the three Weeks, lay generally two Eggs, and about three Weeks after Hatching, they are fit for Market. This Number will eat a Bushel of Peas or Tares in a Week, besides half a Peck of Hempseed, which fattens the young Ones very much, and is made use of by the Higg-lers to cram them on the Road by the Way to *London*; where, at the Seed-Shops, it is often sold for half a Crown the Bushel. They should have constantly several little Bins by them, to let out their Meat gradually into a lower Trough, as they consume it, which is a Means to keep them from straying; this, with fresh Water and Gravel, will keep them at Home, without the Salt-cat and other Contrivances. Indeed some Cummin-Seed is esteem'd very good for its Scent to be kept constantly in the Pigeon-House. An old Pair of Pigeons may be brought from another Place, and will seldom return, if they are kept in till they breed.

Pigeons pay well for their Food and Care that is bestowed on them, and are indeed less troublesome than Rabbits, because they can provide for themselves better. There are several Persons, to my Knowledge, that
out

out of an avaricious Temper, necessitate the Pigeon to seek his Food abroad; but what such Persons get in the Hundred, they lose in the County; for these Creatures, as they are great Breeders, so are they Feeders; and where they are debarred of their Fill, they are obliged to roam at a Distance, and so are exposed to the Loss of their Lives by Guns and Hawks, and often tempted to stray away with others of their Specie, or at least to breed seldomer than if they were kept from that Fatigue and Trouble: It also is the Occasion of some Loss of their Dung, that those most enjoy that mostly feed. A Turner by me keeps forty Pair of Pigeons, twelve breeding Does in Hutches, a Number of Fowls in proportion, and only rents a House and Orchard of five Pounds a Year, which gives him an Opportunity to go to *Hempstead* Market almost every Week, for the Sale of some of their Young; and with Hens-Eggs, during the Season. But his Skill and Diligence in this Affair is (as in many others) half the Profit; and he has often proved, as well as myself, the great Benefit of feeding well, for that then the Cock and Hen will bring up a Pair at a Time, when they will but one, if stinted of their Meat.

K

H E D G-

H E D G I N G.

IN wet Grounds, the Aquaticks are best to plant for Hedges, either by Roots or Truncheons, as the Alders, Arbeles, Willows, Sollars, Black Poplar, and others ; but in dry Grounds, the White-Thorn and Sallow make the best of Hedges ; the Sallow to be planted just within Side, and the White-Thorn without : By this Means when it is at its Maturity, you may cut the Sallow twice to the White-Thorn's once. And here we commonly make our Hedges once in nine Years, when Wheat or Barley is sown in the same Field. Sallow will grow from the Stakes : But Setts planted with good Roots will come quickest. In case you make an intire new Hedge, throw up a Bank by making a Ditch ; let this Bank be somewhat hollow in the Middle, then in the Spring-Time cover the Roots of the White-Thorn well with Mould, and make Holes with a Crow or other Thing, and stick in Truncheons or Pieces of Sollar about two Feet long slopewise, with a sloping Cut on the Top, that the Rain may the better descend to the Bottom ; and put some Horse-Litter in the Middle of the Bank, to keep the Sun and Air from drying the Setts. The Sheep and other Cattle are apt to damage the Sollar,
be

be it old or young; the one by debarking, and the other by cropping the Tops. To prevent this, take Cow-Dung, mix it with Water in a Pail, and with a new Broom throw it on thick. Or take Lime, and serve it so; or take Dirt, and rub the Sollars well with it; and if washed off by the Rains, renew it. Others will make an Hedge with all beechen Setts, especially on the chalky Grounds, which they pull out of the Woods, about two Feet long; but then the Heads must not be cut off, as the White-Thorn or Sollar is: For then they won't grow. There is one Objection against this latter, *viz.* That it will, quickly after making, rise and become hollow; but this with Care may be supplied; and indeed, there is Encouragement from this Plant so to do; because it will return much Wood, as being of the Tree-kind. I planted one about fourteen Years ago, with Cherry-Trees in the same Hedge, at considerable Distance, several of which I have since budded; and both them and the Hedge, for forty Pole, thrive to Admiration. Nor will Cattle eat this Sort of Hedge so soon as they will Sollar or Ash. The Horn-Beam, or Horn-Beech, is said to make the finest Hedge; but about us, we chiefly make use of the White-Thorn, Sollar, and Beech, and reject the Ash, Hazle and some other Sorts.

This most serviceable Invention is the Farmer's Happiness in more than one Respect; it

not only furnishes Fuel, but contributes greatly to his Repose, by being an Assurance Night and Day against Cattle's damaging himself and Neighbours; and therefore ought to be propagated with all Expedition, Care, and Diligence, where it may be done. It also gives him an Opportunity to display his despotick Power (where he is not obliged to the contrary) by sowing what he thinks fit, and when, which open Fields generally debar him from; and it may be depended on, that Inclosing will be more beneficial than ever, for several Reasons that I could here assign. The best Hedge, as I have already said, is the White-Thorn and Sallow, for Wood and Fence, where they will grow: Holly and Furze, indeed, do potently resist both Men and Horses, and are proper in sandy or barren Grounds, where the two first will not prosper. The Horn-beech makes a pleasant good Fence, and is a profitable Wood for Firing, and many other Things, but then it's tedious in Growth. The Ash is useful, but it has its Faults. The Hazle is a slow Grower. The common Beech is beneficial on Chalks, but is late before it is fit to cut in a Hedge. The Maple will thrive well on some Sort of dry Grounds, but is a soft Wood, and bad Fence. In a Word, there are nothing beyond the Sallow and White-Thorn in Gravels, Loams, Clays, &c. but in marshy Grounds the Alder exceeds.

T H E



T H E
Practical Farmer:
O R, T H E
Hertfordshire Husbandman.

P A R T II.

P L A N T I N G.



O plant a Fruit-Tree, as a Standard, or against a Wall or Espalier, there are Diversity of Ways prescribed by several Authors: But as I am very sensible there are some gross Errors inserted in some of their Books, as well as some very useful Rules in others, I therefore shall be very wary in Writing on this Subject. And as my Talent lies chiefly

in Field-Planting, I will be the more particular in Writing of this most useful Science; because a Mistake in the Beginning proves often fatal, and is not so easily rectify'd afterwards, without great and too dangerous Violences. From hence proceeded that grand Discouragement that has so much prevailed over this Nation in general, and is chiefly the Cause of the great Scarcity we are at this Time under for want of more Plantations of Fruit-Trees; and especially Apples and Pears. And as Examples are beyond Precepts, and the greatest Encouragers or Discouragers of Arts and Sciences; so in this of Planting, it has its peculiar Tendency for the better or worse: But I think at present most of the latter. And here I have made many Observations in my Travels, with a concerned View of whole Plantations set too deep, which by Consequence not only disappointed its Owner of his Hopes and Profit, but also proved a forbidding Article to the Neighbourhood not to plant, lest it should be as fatal as it was to Mr. Such-a-one. And, indeed, to say the Truth, there is no Mistake more common than this of Planting Fruit-Trees too deep; and yet nothing is more destructive to them, especially in some Grounds too much subject to Wet and Moisture, nor tends more to keep Trees in a sickly, unthriving Condition, and consequently from bearing either much or good Fruit. A Gentleman near me, by
Purchase

Purchase came to a large Apple-Orchard that had been planted some Years. The Trees were great ones, but return'd little Fruit; this provoked him to enquire the Cause, and found it to be deep Planting at the first; for the Man dug sometimes Breast-deep before he could discover a Root, and the Soil, after a Spit-deep, was red Clay on a high Ground. In the Room of these Trees, he has planted young ones, but after a different Mode. I must own, where the Soil is naturally exceeding dry, and lies on a Declivity, that will quickly carry off the Winter's Wet, the Fault may be less dangerous: But except there be a sufficient Depth of natural good Earth above the Rock, Gravel, or Clay, the Earth complain'd of, will there quickly discover itself, after four or five Years; when the Roots of the Tree will be starved by a hungry Gravel, Sand, Chalk, Rock, Clay, or whatsoever the Bottom be, that lies too near the Surface. On all Accounts therefore it is much the better and safer Way to plant high, provided Care be but taken the first and second Year to keep the Roots tolerable cool and moist, yet not to subject them to too much Wet in Winter; for Summer Wet never hurts them.

Of Planting Standard-Trees.

Various are the Ways used both by Gardeners, and my neighbouring Farmers, in planting Standard Fruit-Trees. And that the Reader may judge which is the best, I shall here set down some, I think, of the worst Methods, as well as the best, I know of. There are some that directly dig up the Mould and make a Hole; in the Bottom of which they plant the Tree, and so cover it up by throwing just the same Mould in again, and leaving it. Others, thinking themselves more careful, will drive in one Stake, and wythe it about the Tree. This is a sad Way indeed; and must end in the Tree's Destruction; for altho' it may live, and grow in Wood and Fruit some Years, yet it can never answer to Advantage, either in the one or the other. And a Case something of this Nature was acted by a Lord of a Mannor, in which lay a fine high Common; he being desirous to improve it, transplanted a considerable Number of young Timber-Trees out of the Woods: The Soil was a Hurlock, chalky Rock, about four or six Inches below the Surface, between which and the Top, he planted his Trees; nor could I perceive any Mould about them above the common Level: And, notwithstanding he

he was at a great Expence, for a Cart, Horfe, and Man to water them during the first Summer, yet afterwards they dwindled, and did not answer. Now, by this Mistake he lost his Trees, the great Charges of watering them for a long Time, and so much precious Time, which would (if rightly made use of) have gone a considerable Way in their Growth. Therefore, happy is he who by others Harms learns to beware. The true Case then of this Matter, as I take it, stands thus: Instead of planting tall, large-body'd Trees on so high and naked a Situation and shallow Soil, I would have put a more young, slender and shorter Tree, in the following Manner; *viz.* Pare as thin a Turf off as possible, then take up all the Mould, even to the Chalk or Hurlock; this done, put the Turf upon the same, the Grasse downwards, spread a little Mould on the same, on which plant the Tree, and cover it with the rest of the Mould. Upon this again spread a good Parcel of Fern-Litter, or other such Stuff; then put two, or three, or more Wheel-Barrows of Virgin or other Mould; about six or eight Inches thick, in the Form of a Bason, about three or four feet over, as your Root is more or less large. The next Thing is to secure the Tree against the furious Winds, the Bite of Sheep, and the Rub of them or larger Cattle; and that is done by driving two large Stakes opposite to each other

other, so that each may be about three or four Feet above the Ground, and about four or six Inches from the Body of the Tree on each Side. Then nail four Cross-Bars to the Stake against one another, two at Top, and two towards the Bottom, stuffing Grass, Hay, Straw or Fern between the Body of the Tree and the Cross-Bars, to keep it from Gallings; then take black or white Thorn-Bushes, and draw them thick between the Cross-Bars, from the Top of them and higher, down to the Bottom; always remembering to make use of those Stakes that are thicker than the Body of the Tree, that there may be a sufficient Hollow between the Tree and the Cross-Bars; and to keep the Tree more firm, wythe it to them. When this is done, there remains but one Thing more to compleat the Planting of a Tree, and this is so perfectly necessary, as not to be omitted: With a Spade first give a circular Cut about the Basen-Heap of Mould; then six or eight Inches back, from that give another circular Cut, and turn up all the Turf, letting it lie with the Grass-part downwards, flopewise, and joining the said Basen-Heap: By this, there will be a round Gutter, which at all Times is ready to receive and make a Lodgment of all Rains that shall fall, and will sufficiently supply the fibrous Roots with Moisture, as they gradually proceed from the Master-Roots. And here ends the Plantation
of

of a Tree for the first Time; but then it is not wholly done with: For either in the third, fourth, or fifth Year afterwards, as the young Shoots push more or less forward through the said Gutter, which is best known by the Growth of the Head of the Tree, you are to make such another Gutter as is before mention'd, to meet and water the succeeding fibrous Roots; and so renew the same, as Time and Judgment will best inform you. Now, let us consider, here the Benefits which accrue by this Method of Common or Field-Planting: First, then, by the Turf and Mould which is placed under the Tree, the Roots are hinder'd, for a considerable Time, having to do with the Hurlock or Chalk Soil. Secondly, they are hereby encouraged to grow spreading and quick, by means of the Toughness of the Turf, and the fertile Salts which are in the same. Thirdly, the Fern or Straw, by being placed between the two Moulds, becomes a Watering-Pot to the Root, and by the Help of the upper Mould, laid in a Bason-form, shelters and shades the same both from the Sun's and Air's too violent Influences. Lastly, the great Charge of Man, Horse, and Cart is prevented, and the Tree secured with a trifling Cost from all Sorts of Cattle.

Another

Another Way,

As practised by a Nobleman's Gardener, on a pretty deep Loam, under which was a red Clay, is this : First he cuts a Circle with the Spade, of about three Feet Diameter, more or less, according to the Largeness of the Root ; then he cuts and takes off the Turf in several Pieces, and lays it by itself ; then he takes up all the next Mould for about a Spit deep, and lays that by itself, and so the next Mould which is worser, he serves the same, and in the Place of which last, he puts the Turf-Grass downwards, then about half of the best Mould he spreads over it, on which he plants his Tree, and covers its Roots with the rest. This again he lays all over with Wheat-straw, and with the rest of the Mould, and two or three Barrows of some other in a Bason-like Manner, makes a Trench round the same, staking and bushing it up, as before mentioned.

Another Way,

Is what I have done amongst others ; and that is, planting a Tree upon the common Grass Surface or Level, without any Manner of breaking the Ground, especially where it
is

is of a wet Nature; and upon the Roots put two, three or four Barrows of Virgin Mould, and Fern and Straw between the same, in a hollow Fashion, with a Trench round it, and so stake and bush up. This Way I have found to answer extremely well, as to transplanted large Cherry, Pear, and Walnut-Trees. But here, I must confess, that the Hardness of the Turf does not give the Roots leave to run so fast at first as others do that are planted in loose Mould so that they will be longer before they get hold of the Ground; but when they have, they generally run faster than others, and, indeed, make the largest Trees of all others: For to say the Truth, upon a due Observation, the biggest and best Trees are found to be those that lie higher with their Roots in the Ground, as is their Fruit; as I shall hereafter explain. The Reasons of this, I presume, may be owing to the Grass-Ground, that naturally attracts and draws the Roots into it; which top Earth being full of the best nitrous and saline Qualities, and more exposed to the Sun, Air, and Rain, give an extraordinary Advantage to the quick Growth of Trees, in Time, even beyond those which are more hid and cover'd in their Roots from those Benefits. But I don't find that an Apple-Tree, and some other Sort, will quite so well answer, because their Roots being of a more tender, soft Nature, are not of that
Strength

Strength to enter and penetrate the hard Crust of the Earth; altho' I have now growing several fine Apple-Trees on this Sort of Plantation. However, I am sensible there are Objections made against this Method: For it is said, That a Tree in this Case is more liable to be blown down by the Winds, because the Roots are not enveloped enough in the Earth to have sufficient Hold: And, again, that they cannot be so well watered for want of a Trench. But to obviate this, I think the due staking up a Tree for a few Years, and keeping a sufficient Quantity of Horse-Litter on the Top of a Border about the Tree, both Summer and Winter, is sufficient to indemnify it against Wind, Sun, and Air. I am sure I have found it to be so, in several Instances of that Nature. But I have heard, that a Gentleman passing by a Plantation, should say, The best Way was to put a thin Layer of Virgin-Mould on the Grass-Ground, and plant your Tree upon that, directly after the before mentioned Manner. Now here is a requisite Observation to be regarded in the Performance of any of these Ways, and that is, That the upper Bed or Layer of Mould that is thus put upon the common Surface or Level of the Ground, must not be too thick; for this, as I have found to my Cost, will rather hinder, than forward the Trees Growth; because, as I suppose, too much Mould keeps the Sun,
Air

Air and Water at too great a Distance from the Roots, whereby they become dry, mouldy, and rotten; or, if they should chance to surmount these Disasters, they grow but at a poor Rate: So that a thin Coat of Earth, about six or eight Inches thick, is often sufficient. But this Piece of Management must be according to the Proportion of the Root: Which leads me to another Remark of this Nature, viz.

Planting of Fruit-Trees in Fields and Closes.

Field-Planting in this, as well as in several other Counties of this Kingdom, will, I suppose, be thought something strange at first by reason of the common Objections.

Therefore, as I now engage myself in an Introduction chiefly new to the major Part of this Nation, I shall endeavour to answer these common and discouraging Obstacles, which have hitherto hinder'd, to a very great Degree, the Propagation of Fruit-Trees, by laying down such Reasons, as I hope will be as prevalent with others, as they have been successful with me. First then, suppose a square Field or Close of forty Poles long every Way, the middle Part of which is ploughed Ground; on four Sides of that are Baulks of Grass-Ground of forty Feet broad.

broad. About the Middle of these Baulks, I plant my Fruit-Trees at thirty-three Feet or two Poles asunder, which will contain at that Rate twenty Trees on a Side, or eighty in all, be they Apples, Pears or Cherries, &c. Indeed Walnuts as they generally have the largest Sort of spreading Heads, should be planted farther off one another: But Trees at this Distance, I think, may answer very well, considering there are none on the two Sides of them, and therefore have Room allowed them for the Sun, Air and Rain to come at the Ground about them, and the Grass not scoured by their too close Cover. But this is left to the Discretion of the Planter, who may perhaps think forty, fifty or sixty Feet Distance much better; and, indeed, I must so far join in his Sentiments, as to think him most in the right, where he can easily spare his Ground: For certainly the Fruit has thereby a greater Opportunity of ripening on all Sides more gradually, and nearer at a Time, and the Grass rather better under their Drip. But my Dimensions here are calculated for the medium Way, and where a Man is to make the most of a little Ground; for I have often known the Grass to be a great Burthen in scorching Summers under the Shade of Trees, than otherwise. And by sowing Soot, Ashes or Lime, &c. in the Winter-Time on the Ground in the Distance of their Shade, prevents the common Complaints

plaint of the Drips souring the Grass. The Rows of Trees being thus planted in the Middle of the Grass-Baulks, according to the Plan here laid down, is for these Reasons: First, the Cart has Room on either Side of them to pass and repass. Secondly, they are at such a Distance from the Hedge, and ploughed Ground, that neither the Heads nor Roots of the one or the other are capable of receiving Prejudice by too close Planting, but has a sufficient Plat of Ground allotted each Tree for its due Nourishment. Thirdly, the Plough-Team has Room to turn on the outer Part of the Baulk, without damaging the Tree or themselves. Fourthly, the Hay may be made much better than in an Orchard, where the promiscuous Shades of their great Numbers proves often very fatal to their Owners. Fifthly, a Fruit-Tree so planted in a Field, has much more the Benefit of the best of Dressing, which is the Dung and Stale of Cattle, who are fed in the same Field by Turnips or sowed Grasses, &c. An Instance of this has been obvious to many, in the Largeness, hasty Growth, and good Bearing of a Cherry-Tree in my Home-Close, which is a ploughed Field; under this Tree the Cattle used to lie and shade themselves, when it was fallow, sowed with Turnips or Grass-Seeds, and was one of the largest Trees in these Parts; and tho' a wild Cherry,

I have sold the Fruit for a Guinea on the Tree, clear of all Charges. How much then must a Field-Tree have the Advantage of a pent-up Orchard-Tree? So likewise are those Trees planted next a Road-Way, whose Roots are dressed by the Sullage of the passant Cattle; and which, if observed, may easily be perceived to excel those by far that are planted more in the In-ground. But here I would be understood not to be a Votary for planting Fruit-Trees in Hedges, except for the Road sake, because the Roots of the Hedge are so many Thieves about its Root, and impede its Growth: And if by length of Time it grows large, then another Evil ensues, which is, that its Head by the Drip often kills or damages what grows under it, besides the Misfortune that accrues to the Hedge by People's getting the Fruit. This Standard Field-Planting is vastly preferable to half Standard, Dwarf and Wall-Planting, because of late Years several Sorts of rich Fruits which have been sheltered by Mats, and other Contrivances, have been discovered to prosper as well or better on the Field on whole Standards, and bore much greater Quantities of Fruit at less Expence, and better tasted, than those on Walls or Espaliers; because Part of their Fruit by the Shade, is hid and kept from the Sun's Influence, which makes them generally ripe on one Side, and unripe on the other:

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other : Witness the incomparable *May Duke* Cherry, several Sorts of Pears, *Orleans-Plumbs*, &c. And even in the Vale of *Aylesbury*, where they reckon no Cherry-Tree will rightly prosper in that naked Country ; there, I say, this *May Duke* will grow and bear constantly, as in other Places. Here also is the great Expence saved of Pruning, Nailing and Tying, which in Half-Standards, Wall-Trees, and Espaliers, amounts to considerable Charges, and which not only takes up much precious Time, but shortens the Life of the Tree ; whereas a Standard is rather hinder'd than furthered by the elaborate Practice of the Knife. What a charming Sight is a large Tree in Blossom, and after that, when loaden with Fruit enough perhaps to make a Hogshead of Cyder or Perry ! A Scene of Beauty, Hopes, and Profit, and all ! It may be on less than two Feet Diameter of Ground. And above all, what Matter of Contemplation does this afford, when we let our Thoughts descend to a single Kernel of an Apple or Pear ? And again, how heighten'd, on the beholding so great a Bulk raised and preserved by omnipotent Power, from so small a Body ?

There is also another lamentable Objection belongs to the Field-Planting, by the Vulgar and Ignorant ; whose Argument against it is, That the Distance of the Fields from the House exposes them to Loss. But

when I write of Planting abroad, I mean such to answer Delight and Profit, as are something numerous, which I think a hundred or two of Trees will; and then I am of Opinion, by the Care of a Looker-after during their ripening Season, the Fruit is safer than in a contiguous Orchard: For in a Town or Village, the Boys are most plenty, and their Escape is at Hand, when by the Remoteness of the Fields, they can't so easily clear themselves. Besides, this perhaps may not be an Extra-charge, if the Overseer can occupy himself in other Business near the Place. This is annually done in and about the *Kentish* Cherry-Orchards and Plantations. His Grace the Duke of *Bridgewater* was so good as to give me leave to take up a Score of wild Cherry-Trees out of one of his adjacent Woods, about twelve Years old; these, with their large Roots, I transplanted on the Grass-Baulks of a five-acre square ploughed Field, in Rows with no other Earth than what I found in the Place: Thus, I made a circular Hole, and put the Turf first down, with a little loose Mould on the same, on which I planted my Tree; then I put some Fern, and cover'd it with the rest of the Mould; by this Method there became a hollow Place all about the Roots: And notwithstanding the succeeding Summer was very dry, they grew and flourish'd very well, and two Years after, I budded them

them with a *May* Duke, on the new young Shoots that followed after cutting off the old natural Head when I planted them. Here the Roots were intirely envelop'd and cover'd in Virgin-Mould, the greatest Promoter of Vegetation; and by putting no additional Mould, the Hollow about them received the Wets in a more ample Manner; the Sun and Air had free Access, and even the very sulphureous and nitrous Dews, I believe, were not a little serviceable: Which plainly discovers the Excellency of this Sort of Planting; for had there been put another Coat of Mould more than the Place naturally afforded, then I don't suppose these Benefits would have been so propitious; because they, especially the latter, would not have had an Opportunity of coming so free and quick at the Roots, which by only having a thin Covering of the natural Mould, are exposed more immediately to the vivifying, nutritious Particles of Heat, Water and Air. But indeed, to be more secure, I generally put some loose Horse-Litter only, upon and about the whole Border, by way of Safeguard against extraordinary Droughts and Frosts, that may happen in the Summer and Winter next after planting any Trees. But I dare not use the Cherry-Tree as I do the Apple and Pear; for upon these I put absolute rotted Horse-Dung, Fowl-Dung, or Rabbit-Dung, to wash down on their Roots, and so

let it lie all the Year on the Border. This makes their Head Run at a great Rate, and as it is an outward Application, the Trees are free from the Danger of Cankers, which Dungs will certainly produce, if laid to the naked Roots of any Tree when planted; on the Contrary, this Virgin-Earth is a direct Security against the Canker. Even an Apricot, which is most subject to it, will live sound and free in this Mould. However, as a Cherry of all other hates both Dung and Knife, I only venture Horse-Litter or Fern on or about it. And this Fern, as I have experienc'd, is beyond Straw, when laid on the Roots at the Time of Planting; for as it is of a cold, spongy, wet Nature, it does its Office better, by keeping the Roots moist, and will also prevent the Mice making their Lodgments in the hollow Mould of a new-planted Tree, which they often do, sometimes to the killing of a Tree; when Straw, that is of a dry, hollow Nature, invites and shelters them and the Pismires, who likewise are often fatal Enemies. These Shelters then are of exquisite Service, when applied above and below the top Mould: And this last, long, dry Summer, proved the Truth of this, and another Invention a Gentleman near me made use of to defend the Bodies of new-planted Trees, as well as their Roots: He got furzen Faggots, and laid at the Bottom, and so piled them almost up to

to their Head, which answered extreme well.

Of the Circulation of the SAP in T R E E S.

*To help barren Trees, and to make others
more prolifick.*

THE Knowledge of this is certainly necessary for all Planters; for by it a Man is render'd capable of making his Estimations in Budding, Grafting, Planting and Transplanting, Pruning and Lopping. This Circulation of Sap in Trees, as well as Blood in the Bodies of Animals, is now past Contradiction, from that famous Instance of transfusing young vigorous Sap into an old dwarf Pear-Tree, which was done with Success by the great *Dr. Bradley*; who planted some young Pear-Stocks in Reach of the Head of the old Tree, two Stocks within an easy Reach of the best Branches of the old Tree to which they were inarched or grafted, by being inlay'd in the Spring-Time of the Year, and were perfectly joined with the young Stocks in less than three Months. By this the old Tree, whose Fruit through Age had dwindled to but little bigger than a Hazle-Nut, bore larger Fruit than ever,

and afterwards became so firm, that he was obliged to check it by sawing it half thro', and driving Wedges in ; but this did not check it enough, for he saw'd the old Tree intirely from its Roots, and then it bore Fruit for several Years. A Pear-Tree, as I hinted before, will endure Planting on the very Crust or Turf of Grass-Ground, and is of such Force in its Roots, as to make its Way thro' the Crevices of a soft Rock, and therefore will do in any Soil ; and if I was to plant Fruit-Trees on a Gravel, I would there plant the Pear sooner than an Apple or Cherry, because the former will grow and flourish, when the other will languish and complain. And for want of a due Knowledge of this, many Persons have suffered very much in their Plantations ; and certainly, 'tis of great Consequence to plant a right Tree on a right Soil, and to a right Aspect. A Pear-Tree is one of the most luxuriant Trees that grows, and where the Soil is *à propos*, it will grow to a prodigious Magnitude, and return Fruit answerable ; as the Relation is of one in *Herefordshire*, whose Fruit in one Season made seven Hogsheds of Perry ; a fine vinous Liquor indeed, if made of Pears accordingly. I have made near a Barrel of thirty-six Gallons from one I have now growing, which is an Orange-Pear ; which mixed with a red Catherine, is said to make excellent Perry. This large
Pear-

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Pear-Tree of mine was somewhat hollow thirty Years ago; and about twenty Years since his old Head was intirely cut off, in order to make him more prolifick. It then began to throw out a great number of Shoots at Bottom; but by grazing of Cattle about it all the Summer, they check'd it by their Bite, and the new young Head prospered, grew, and bears brave large Fruit to Admiration. And where a tall Standard Pear-Tree has got too much great Wood on it, and that canker'd, or full of Mofs, I am of Opinion that this Method is the best to renew and renovate it.

The Way to alter the Fruit of any old gummy Standard-Tree.

As Cherries, Plumbs, &c. are Trees that are attended with a Refin or Gum, which, in many, issues and runs so fast as to cripple and kill them, therefore these Sorts must be treated in a different Manner from Pears and Apples. If you have such a Tree, which does not bear well, through Age, want of Sap, or by too much Mofs or Canker, then cut off all the Head, except a few of the lowest, spreading Branches; for these will employ, draw up and give the Sap Room to circulate, that the Tree will presently get a new upright Head; then the very next Sum-

Summer, or the Summer after, you may bud the several new Shoots with what Sort of Cherry, Plumb, Peach, &c. you like best. A Year or two after that, the old Branches may be cut off, and the new Head have the whole Supply of the Root; but if these Branches were not left at the Time of Lopping, these gummy Trees often die, as I conceive, for Want of Room to employ their Sap, and the too sudden total Decollation of them, whose Ducts and Vessels have for many Years before enjoy'd a free Circulation. And from hence, often, is caused that Issuing forth of Gum at the Top and Sides of these intire lopped Trees, which so often proves fatal to them. Now, if it be a hollow or blighted one, the above Method is the best Way to recover it, and to renew its natural or improved Fruit; as one in our Neighbourhood did: And the hollow Trees bore afterwards as well as ever. And I have now six sound Cherry-Trees growing, that were near fifty Years old when I cut off their old Heads, (as not liking the small, wild Fruit that they bore) and put above ten Buds on the new Shoots of each Tree when they were two Years old, and now they have got large Heads in about six Years, and bear the White Heart and Black Cherroons in my Upland Meadow, through which is a Path-Way to *Dunstable*. And the best Time to lop them, in my Opinion, is about *Christmas* or

or *Candlemas*, the latter rather best; because the longer the Frost has Power of the Cut-Part, the more it endangers it: But it must be sure to be done before the Sap stirs. So the Hedger that wants Work often says, It is best to make a Hedge early; but it's found by Experience, the latter Season is best, especially an old Hedge. And for want of knowing the Way of managing a gummy Tree, I have formerly suffer'd the Loss of several fine Cherry-Trees.

*To help other Sorts of decay'd or barren
Trees.*

Many are the Ways prescribed and practised, as so many Catholicons, for helping and restoring these Sorts of Trees; so that if a Tree wants Sap, or has too much of it, one and the same Remedy is to be made use of in both the Cases; and therefore, as the true Cause is first to be found out, the following Applications may be made use of. In case then a Tree is too deep planted, got mossy, or cankered, after cutting the Cankers out, dig up as much Mould as can be got from about the Roots of the Tree, (and some let them lie thus uncovered most Part of the Winter, for the Sun and Frosts to benefit them by their healthful Influences, and in the Spring,) then take up as much
Grass-

Grass-Turf as will fill up the Hole or Foss, cut it into Pieces, and put it, Grass downwards, upon all the Roots. This being full of Riches, and lying hollow on them, will in Time, by the subsequent Rains, wash down and impregnate the old Roots with new fertile Salts, and cause a Renovation of the whole Tree. But this is not all, the Head must be managed as well as the Roots, and that by making use of the Back of a Knife, and rubbing and scraping the Tree, when it is wet, therewith; or, when the Tree is dry, to rub it and the Arms of it with a Hair-Cloth: This Method is absolutely necessary not only to mossy Trees, but on the most healthful, in order to keep them so, and prevent Moss, and is, in Proportion, as requisite as Currying to a Horse: For the Bark to the Tree, is as the Hide to the Horse, and both require Dilating and Cleansing by frequent Rubbings and Scrapings with proper Instruments. This Usage I have known to recover and bring into an advantageous State of plentiful Bearing, several old large Apple and Cherry-Trees, even without digging or breaking any Ground: The Trees were over-run with Moss, and turn'd to little Account, till a poor Day's-Man took the Orchard, who, for the sake of obtaining Fruit to pay his Rent, was tempted to use his Diligence in this Manner, of clearing the Trees of their Moss.

Others

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Others again will dig up the Mould about the twentieth Day of *June*, when they make their new Shoots, and apply dead Dogs, Sheep, or other Carrion in its Room, to the great Amendment of the Tree; also the Blood of Hogs, and other Cattle, and likewise the Excrement of their Paunches is of great Importance. And this last Spring I apply'd to the Roots of a young Vine that grew against my House, the Blood of a Hog; but at the first coming of the hot Weather, the Blood began to be offensive: I therefore took a Pail of Wood-Ashes, and covered the Border all over, which being wash'd in by the Rains, the fix'd Salt of the Ashes soon overcame the ill Stench of the Blood; and both these by emitting their several Salts to the Roots, made the Vine shoot more in one Summer than it had done, I think, in three before. From whence I conclude, that Ashes in particular, moderately made use of, are of an excellent Nature in promoting the Growth of the Vine, or any other Sort of Fruit-Tree whatsoever; and so is the Salt of Urine, if prudently used. An Example of its great Efficacy I saw at *Dagnal*, about a Mile from me, where, against the Back-Door of an Ale-House, there was one grew, and bore more Grapes, they said, than any one Vine in ten Miles round, against a South-East Aspect; and this great Fertility, they own'd, was owing to the People's pissing upon and
about

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about the Bank that cover'd the Roots of the Vine. Yet here I would remark, that altho' the two Ways above mentioned are very good, I should think the laying all Turf about the Roots is rather too solid, and will become too hard, so as to hinder the Rain and Air coming easily at the Roots ; and all Furze will be too hollow : Therefore I am of Opinion, that a Layer of Furze and a Layer of Turf will do best. Some will take Chalk and put next upon the Roots of a mossy or too deep-planted Tree, and cover with Turf.

Of the Checking the Sap in Trees, to make them more prolifick.

The Extreme of too much Sap is a grievous Fault, and is always an Enemy to Fruit-bearing ; and therefore sometimes a Tree will, by this Means, run into Wood, and not into Fruit. Again, it will sometimes be overpower'd with Fruit, but then it is small and will not bear again perhaps in three Years. In this Case, lay open its Roots in *February*, and cut off close by the Stem, some of the largest Roots, with a sharp Chizel, then throw in the Earth presently ; this will hinder an Overflux of raw Sap, and help it to digest its Juices regularly.

Where

Where the Sap is too firm in a Pear-Tree, either Wall, Dwarf, or not too big a Standard, then cut his outer and inner Bark quite round four Inches broad to the naked Body, and it will grow and bear Fruit the better; but no other Tree will bear this Usage; because the Pear-Tree having the largest Pith, the Sap has sufficient Passage that Way: And this I have seen done to a Wall-Pear at *Penly*, which bore Fruit the better for it afterwards. Another Way: Suppose your Tree in an Espalier is too strong in its Growth, that most or all its Wood is over-luxuriant to bear the next Year; then from the Middle of the Tree let a strong Shoot grow up, to carry up the most watery Juices, and the young Wood in the lower Part will bear, while the other may be trained to make a Head above the Espalier, and will also bear plentifully, whilst the bottom Part will also produce abundance of Fruit. Another Way is, to mark the Bark of a Tree round and round, in a Screw-like Manner, and cut the Bark in those Marks to the Wood, about the tenth Part of an Inch wide. There is another nearer Way than this, of making Trees bear Fruit; and that is, by budding or grafting them with Buds or Scions of good bearing Trees, which having a good digested Sap in them, will communicate it to the several Parts of the Tree, and make it fruitful.

All

All transplanted Trees are certainly very much check'd at their Removal; but the Art is to find out a Method best to preserve them from Deficiency. For my Part, I think the very best natural Season to remove a Tree in, is *October*, and in a moist Time, when the Ground is thorough wet, and to replant it as soon as possible with as much Mould on it as can be brought away. As to planting at Midsummer in Mud, and keep watering the Plant after, it is right, and only so, when Necessity obliges.

*Of the Aspect, and the Exposition of Trees,
and their Shelters.*

There are old traditional Directions repeated in Books, That a Tree in Removing or Transplanting, should be first marked in the Bark, that it may stand just in the same Manner to the South as formerly; and also that they should be set in such an Age of the Moon. But both these, and many more, are justly confuted by the more sagacious modern Authors, and more substantial Truths and Methods instituted in their Room. Yet it is of great Consequence to plant a Tree in a right Situation and Aspect, both against a Wall or a Standard. In a Field, where a Row of Trees are planted on a Baulk, they generally are not far from a Hedge, which,
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if thick and tall, may shelter them whilst young, and after, if they run not very high, from the North and East-Winds, &c. This so much defends the Fruit-Trees, as many Times to hinder their Blights, when others suffer. And likewise in planting an Orchard, the tallest Sort of Trees ought to be set next the North, North-East, or North-West, to defend the more short from the Violences of those Quarters in particular. And not only so, but the very particular Sort of Fruit should be consulted, that they may be such as are most hardy. Indeed, Mr. *Bradley* carries this Intimation farther; and lays a great Stress on chusing and adapting Rows of one entire Sort of Fruit, or wholly a Plantation of one Sort of Pears, Apples, &c. because when they are planted promiscuously, the Farina or Seeds are carried in the Blossom-Time by the Winds from one Sort to another; which occasions a kind of Adulteration in the Fruit, and alters the genuine Taste in those Fruits, that otherwise would have them. According then to this Doctrine of his, how valuable must this Field-Planting be? For here, the Trees in their great Distance of Rows are cut off of that Sort of prejudicial Communication, and the Fruit enjoyed in their original and true pristine State. And this reminds me of the Complaint I have of late Years heard, that the true and great *Kentish Pippin* is so degenerated, that now

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there

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there is none to be had as formerly for
Goodness and Bigness. It seems therefore,
according to my Conjecture, that the Want
of this Knowledge and Practice, may pro-
bably be the Occasion of it.

Of the Choice of Fruit-Trees.

Trees are certainly like Animals, as to
Youth and Age : And here I must own my
Mistake, which some Years since I was guilty
of, in preferring old large Apple and Pear-
Trees before young smaller ones. And be-
ing in a Nursery at *Redburn*, I thought my
self in the right of chusing these large Trees
about twelve Years old, to transplant in my
Fields ; when the same Season I had some
from *Brentford* about four Years old, that
grew at least three Times faster in one and
the same Field. The former I had off a
poor Ground, which, according to the shal-
low and utterly wrong Notion of some, is
esteemed a valuable Opportunity, when from
thence they are transplanted into a more
rich Soil : But this I have found to be a very
gross Mistake. To explain which, I refer,
as I said before, to the Animal Kingdom,
where it is obvious, that if a Beast in his
Youth is stunted for want of sufficient Food,
&c. he will never thrive, nor arrive to that
Bulk of Body and Tallness, as his Fellow
that

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that was brought up under the most plenary Advantages; even so it is with a Fruit-Tree, as they may surely prove that try the Difference. In a Nursery, particular Care ought to be had in the Inspection of Trees, that none may be made Choice of that has a Canker or any Tendency thereto; for this is a malignant Disease, and is seldom cured but by cutting out: So no less Care is to be had in buying those that are well rooted; for without that our Hopes are vain. And notwithstanding the common Cant of the Nursery-Gardeners, who often impose on the ignorant, by telling them this or that Tree will grow, altho' but half or a quarter rooted, give them not Credit. It is true, they may grow and languish for a little Time; but the former Reasons I have laid down, of the Loss of our Hopes and Profit, the precious Time and Ground, is enough, I hope, to prevent this Imposition. A great Fruiterer in *Thames-Street* told me, that great Part of our Apple Plantations ought to be extirpated or their Heads cut off, and better Fruit put on; for that in the Room of others, the Golden Rennets, Pippins, and Pearmains should be planted; for their great Use, I suppose, in making Cyder of that Sort as at this Time of Day is reckoned most wholesome to the Body, and agreeable to the Palate; and also for their great Use in the Kitchen, and at Table, above others. And here I add my Sentiments of another Sort,

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which

which is now very much in Vogue, namely, the Non-pareils; I mean such as are grafted on the free Stock, in order to become tall Standards, as some are by me, on high Ground, and a cold, loamy, wet Soil. This Apple is a Bearer on such a Tree, and has a great many good Properties belonging to it; it is an Apple that will make very good Cyder, and now generally preferred at Table. It keeps a great while, provided due Care is used in its Conservation: Not as soon as gathered put in Heaps on Wheat-Straw, as the common Way is, for that generally terminates in their Rottenness, because the Fruit will in a little Time sweat, and naturally expel their phlegmatic and crude Juice, which will not fail of wetting the Straw they lie on; and this, after the Sweat is over, will consequently rot the Fruit: For all keeping Fruit has several Arch-Enemies attending it; the one is Moisture, the other Frost, and the third the ill Savour of the Place, or Boards on which they lie. The first is prevented by letting them lie in Heaps in large, tall, loose Baskets, such as the *Thames-Street* Fruiterers use; or on Oak, and not Deal-Boards (unless they are very old) else the Turpentine Scent will affect the Fruit, and lastly, by keeping them in such warm, dry Places, where neither Frost, nor Moisture can do them Damage. I have drank such Pippin Cyder, as I never met with any where, but
at

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at *Ivinghoe Arson*, just under our *Chiltern Hills*, where their Soil is partly a chalky Loam: It was made by its Owner, a Farmer, and on my Recommendation our Minister went with me to prove it, and gave it his Approbation. This was made from the *Holland Pippin*: And of such a wholesome Nature is the Pippin of any Sort above all others, that I remember there is a Relation of its wonderful Influences, I think it was in *Germany*: A Mother and two or three of her Sons having a Trial at Law, were asked what they eat and drank to obtain such an Age, which was 4 or 500 Years that they all made up amongst them; they answered, chiefly by eating the Apple, and drinking its Juice. And I knew an eminent, rich Lawyer, almost eighty Years old, who was very much debilitated through a tedious Sicknefs, on the telling him this Story, got Pippins directly, sliced them to the Number of a Dozen at a Time, and infused them in Spring-Water, and made it his common Drink, till Cyder-Time came on; also he fell on planting a Number of Pippin-Trees in order to his enjoying their salubrious Quality, and a fine Plantation there is at this Day in his Gardens a few Miles from me. This Practice of his drinking the Pippin Liquor and Cyder, answered extraordinary well, for he lived several Years after, in a pretty good State of Health.

To make a stronger Cyder than the common Way.

Not in the Screw-Prefs, so well as the Lever-Prefs, because the first confines the Bag too much, and so the middle Part of the Bag escapes the regular Pressure that the two Outfides enjoy. But the latter has the greater Opportunity of forcing most Part of all the Apples in the Bag. Now to have the best Part, is to squeeze the Apples in the Bag very softly, and but little : This first Running of the Apples is as the first Wort of Malt.

Of Planting the Sides of Barns and Out-Houses, &c.

And here I must take notice of a general Misfortune, that I frequently see in my Travels, of many brave Sides of Barns and Out-Houses, Pales, and sometimes Partition-Walls, lost (as I may say) by being not improved with Trees answerable to several Aspects and Bearings ; and the rather, for that the Thatched Eaves hanging more over, and being more thick than those of Tiles, and so much the more valuable, for their great Security in preventing Blights. For most of our Blights in Spring and Autumn fall perpendicularly ; that is to say, the condensed
Vapours

Vapours, falling upon the upper Region, do form themselves at Night, when the Sun has withdrawn his hot Influences, towards the Surface of the Earth in Dews and watery Drops, subject to be frozen by the Coldness of the Air. And therefore the more any Thing lies open and exposed to the perpendicular Descent of Vapours, the more will it be subject to be frozen and blasted; the Truth of which is confirmed to us both by Reason and Experience: For the Observation of this is plain, when the Leaves and tender Shoots of a tall Ash-Tree, in one of those blighting Nights, may be seen to be frozen and as it were singed at the Bottom and middle-Parts of the Tree, whilst the upper Part, that is exalted above the Influence of the Mist, shall be left free and untouched. But as to the black Wind-Frosts, which come more horizontally, altho' these Eave-Shelters are of singular Advantage, yet I am forced every Spring to make use of our common five-floted Hurdles of eight or nine Feet long and about four wide; these I have drawn with Straw-Bands, and woven through the same, which I put against my Wall-Fruit slopewise; and these are in my Opinion far better than Mats, because they are of less Cost, and admit more Air to the Trees, when at the same Time they keep off the Wets and Frosts in a great Measure, are easily put up and down when the Weather encourages, and do not break the Blossom

nor Fruit, which Mats often do. And such Advantages have been found in defending the blossoming Trees from the Wets, that some have put large Frames of Glass over, or before some of the best Sorts, when they are in Flower, and hardly a Blossom misses setting for Fruit. I suppose the Rain in this Case prevents the flying about of the *Farina fecundans*, or impregnating Dust, without which, Generation in Plants becomes abortive; so that it cannot perform its Office of setting the Fruit, or in other Terms to light upon, or enter the *Uterus* of the Blossoms. This Dust, Mr. *Bradley* says, is the Male-Seed, and must be received into the *Uterus* of the Female, in such a Manner as to reach the *Ovum*, and even to lodge itself in that Egg, before the Female can become pregnant. And again, it is no less certain, that the Seed of all Animals in Health abounds with living *Animalculæ*, some one of which, when received into the Egg, as its proper *Nidus*, becomes in due Time a perfect Animal according to its Kind. These *Animalculæ* are easily discovered by good Microscopes; and that some of the *Semen*, which abounds with these *Animalculæ*, does pass into the Egg itself, is evident from the Observations one makes every day of the Cock's Tread, in the Eggs of Fowls and Birds, without which it is known that the Egg will be unproductive. So it is plain, that if the Male-Seed
does

does not pass into the *Ovum* of the Female, the Female cannot become pregnant, nor be productive of its own Species. The Proof of this is plain also in Vegetables; for if a Hazle-Tree stood in a Place distant from any other, and the Catkins were timely in the Spring cut off, there surely would be no Nuts that Year on the same, because this is a Gelding or Castration; for the Catkins retain the Male Part, and the small reddish Blossoms the Female; which at a due Maturity opens, and by the Wind receives the Male Dust that is so blown from the Catkins, and becomes impregnated. Again, there is a terrible Misfortune that sometimes happens by Vale or Dale Mists, especially when they are accompanied with a Frost, and when at the same Time, the hilly Grounds about them entirely escape; and even on *May-Day* it has totally destroyed the young Mulberries, Cherries, Plumbs and Walnuts, &c. Which proves that Hoar-Frosts in Spring and Autumn are most dangerous Enemies; but dry Frosts are not so bad as wet ones. To prevent then, in some Measure, these Disorders, some of late have planted most Kind of Fruits to a right Exposition of the Sun against Espaliers, which they guard both before and behind as they see Occasion, with portable Reed Hedges in Frames; so that the Trees cannot easily receive any Harm, either from the blighting Winds or Rain: For these
Frames

Frames may be set so close to the Espaliers, that the Rain cannot get at the Blossoms to wet them; for Rain, when the Air is in Motion, cannot fall exactly downright.

Transplanting of Trees.

Transplanting of large Trees I think is done in the best Manner, when they dig a large Trench or Gutter about them, in *October* or *November*; that the Frost may come more immediately round the Tree, Root and Mould, and will keep all three so firm together, that they may be taken up by the Help of Pulleys and Levers, or by Levers and Mattocks, and carried on a Sledge to any other Place.

But young Trees may be easier done, by drawing them leisurely out of the Earth, or dug up with all the Roots that can be got, and with as much Mould as can be brought away with them, and set in Virgin Mould; always endeavouring to spread and lay the Roots severally on their new Place, and plant as is before directed.

If Necessity obliges any Person to transplant in the Summer, then Mr. *Bradley's* Way is best; that is, to plant the Roots in a Pap, or Mud, and keep watering throughout the Summer. This indeed will make them strike, and make new Roots directly,

ly, altho' transplanted with the Head and Fruit on.

As I remember, it was about the Month of *April*, when that generous Gentleman, *Richard Screen*, Esq; whose Seat is near *Bath*, gave me leave to present him with some Cuttings of White-Elder, of about two Feet long, which I did, and sent them to him at *London*; where I desired he would let his Servant soap the Ends of them very well, as I did here before I sent them: He was pleased afterwards to return me his Thanks for the same.

Also, as an Author says, if a Tree be carried a great Way, even in the open Air, it may be safely done by washing the Roots, and anointing them with Soap all over.

Currants and Gooseberries may be made to grow as Standards, the former twenty Feet high, and the latter twelve. The Gooseberry at first, as well as the Currant, must be staked up: The Currant will also cover an Arbour well. The great white and red *Dutch* Currant is a fine Fruit. But for the latest Experiments and Methods to improve them, I refer my Reader to Mr. *Cowell's* curious and profitable Gardener.

Farther

Farther Observations on Planting.

I shall be brief in this Article, because I have already enlarged on it, and shall only say, that now about me, it is become a general Practice to plant the Fruit-Trees on the very Surface of all Grounds, be they Chalks, Gravels, Loams, or Clays, be they either ploughed or sowed, because the best Earth is always at Top; and by covering their Roots, after they are planted in good Mould, with Dung or Horse-Litter, they will be secur'd against the Drought, and grow as fast again, as if set deep in the Earth; especially if Virgin Mould is first put in a Foss, for their Roots to run into in *October* or *February*; for then let the succeeding Summer be dry, they will grow and flourish without watering (as I have already observed) which would be an excessive Charge and Trouble, if Trees were planted at some Distance from the House, or on Hills: By this Method large Plantations might be propagated to great Advantage; when, on the contrary, all the Charge of Fruit and other transplanted Trees would be lost, which indeed in many thousand Instances have proved a Discouragement, not only to those already planted, but to the Propagation of others that would have been planted, had the first answered Expectation; and I dare

dare say this is the main Impediment why the County of *Hertford*, and several others near *London*, are not at this Day better furnished; which, if they were, would prevent, in a great Measure, the Effect of the old Proverb,——*Far fetch'd and dear bought*,——as is true at this Day; however, I hope in Time the Scales will be taken off the Eyes of the Landlords Minds, that live in the adjacent Counties to *Middlesex*, who have a better Opportunity by far, than some of the North-West Counties, whose Benefit is partly advanced by our Mistakes; because what hinders many Improvements, is a barbarous Notion that governs too many, who are adverse to new Discoveries, or envying others that have rival'd their Wishes or Intentions to propagate the same; such, I say, are too much guilty of that sordid, savage Quality that is charg'd on the Dog under the Manger, that would neither eat Hay himself, nor let the Horse eat it. Others that are ignorant of these most necessary Improvements in Farming, are ready to slight an Essay on the first Sight, because it is not within the Compass of their narrow Understandings. This I have had a regretted Experience of by too many of my Countrymen; but however, I am resolved that shall be no Barrier to me, because I am persuaded these, and the many other new Things that I am going to publish in Agriculture, &c. will be followed and
practised

practised in Time by those very Cavilists, for the Sake of their Interest only; for I don't expect Dint of Reason will ever get so much the Ascendant with these Sort of People, as to reduce their Obstinacy to practise upon any other Footing.

Again : In the Undertakings and Performances there are many Mistakes committed, to the entire Discouragement of the Owner; as the Planting of an Apple where a Pear should be; a Cherry instead of an Apple; a Walnut in the Room of a Codling, Plumb, Pear, Cherry, &c. and then the Issue will be Charge and Expectation without Profit: Or else by an erroneous Method of setting a Tree in the Ground at first; and this is so great a Calamity, that I dare be presumptuous to say, That not one Orchard in six, throughout the Nation, is planted right. How necessary then are these Books, that may convict Persons of such fatal Mistakes, and shew them at the same Time a Way of Planting, that will be truly successful, and give them Fruit in a little Time, as well as many Years afterwards?

For this Purpose, happy are they that possess good Earth, for we find that this will give more than that which is mended with great Cost and Charges: Therefore it is very necessary to enquire into the Quality of your Ground, whether it be heavy or light, dry or moist, soft or strong, what is proper to mend
the

the Ground with, and how to chuse Trees fit to plant it withal: For he acts the best Artist that accommodates his Tree to its proper Soil.

Moist Ground produces the largest Trees, and Fruit and Trees will last many Years longer in stiff, moist Grounds, than in the more dry and loose Earths; but then the Fruit will not be so well-tasted in the former, as in the latter. He that will but observe a moist and dry Summer, and the Difference of Soils, may soon discern the same by the Taste.

According to your Ground, you must chuse several Ways of Dunging.

C O W - D U N G,

Is a fattish, but poor Excrement, yet is good in all hard, dry Grounds, to make them soft and light.

S H E E P S - D U N G,

Is of a hard, unctious, saline and hot Nature, and assists all Grounds more than any other: It is a universal Dressing to any Manner of Earth whatsoever, and of two Years Duration in the common Fields; and therefore, where any Surface of Ground can be
con-

conveniently come at with the Fold, it will do vast Service to the Roots of any Tree, both in Summer and Winter; it is this that makes Field-planting so beneficial, because when Trees are planted in Rows on the Grass-baulks or Hedge-greens of ploughed Fields, they consequently receive great Assistance from these and other Cattle's dunging and staling on their Roots, as I have before more largely wrote on: And where a Person has an Inclination to plant a Piece of Ground with Fruit-Trees, who has no Sheep of his own, this may be supplied very well, if he lives near Commons that are grazed by Sheep; for then he may gather all the *Summer* long Quantities of this excellent Dung, with which he may make an Infusion, and water the Roots of his Trees with the same to an extraordinary Profit. The Stale of this Creature is also certainly of a very hot, saline Nature, by Reason it generally lives with less Water than any other Beast whatsoever of its Bigness, and therefore of great Efficacy to the Roots of Trees, and indeed most other Vegetables. Their Wool likewise administers a Nutriment to the Earth whereon they frequently lie, by the Warmth and Grease thereof.

H O R S E

H O R S E-D U N G,

Indeed, is better for a Flower-Garden than Trees, in some Respects: But there is a Way of making it very serviceable for Trees also, as I have often experienc'd; and that is, let it be well rotted, and then put it on the Surface of the Earth, at any Time of the Year, about four Feet round the Body of the Tree (but never put any close to the Roots, for then it will breed a Canker in the Body of the Tree) and then the Rains will have an Opportunity to wash its Salts in upon the Tree Roots, and cause it to grow a prodigious Pace, and the more because it keeps off the Sun's too great Power from the Roots, which, in hot, dry Summers, is apt to destroy, rather than nourish; and therefore, it should always be kept upon the Roots throughout the Year, because in Winter it prevents the Frost's Mischiefs, as well as in Summer the Sun's.

H O G-D U N G,

Is good for almost any Ground, as being of a more moist, fat Nature, than the dry, hot Horse-Dung: It is a quick Promoter of Vegetation, and an excellent Dressing for al-
N most

most all Sorts of Ground, but is more or less good, as the Food is that produces it; for Horse-Beans that are generally given to fat this Beast with, being of a very hot Nature, and abounding with Plenty of the Nitre-Quality, are certainly very fertile, and very proper to be laid on the Surface of the Ground upon the Roots of Trees, but best of all when it is carried directly out of the Hog-stye or Yard, before its Salts are washed away by the Rains. This Dung, if mixed well with Mould, and let lie for some Time to rot and incorporate together, will be a very good Composition to plant a Tree in; or laid, after the Tree is thoroughly planted, on the Top of its Roots, about six Inches thick, and three Feet from the Tree's Body all around it. So, likewise, if it is laid alone, as it comes out of the Stye, or mixed with Earth, all about the Roots of an old planted Tree, and kept on the same all the Year, it will do Wonders in the Production of Wood and Fruit, as I have truly experienc'd, by several Trials: But I don't advise the laying of such crude Dung next to the naked Roots of either old or young Trees; for if this is done, it is a Chance if it does not destroy the Tree, by its great Heat, and the close Adhesion that this greasy Dung joins the Tree-Roots. However, if discreetly us'd, it is certainly one of the best Dungs, and therefore, the Multiplication of it ought to be

be endeavour'd by all who keep Hogs, which may be done, if Straw, Roots, Garbage, Weeds, &c. are timely supply'd to them. In short this Dung, by most Farmers, is esteem'd the most fertilizing Manure of all the Quadrupeds, either for the Assistance of Trees or Grain ; and for this Reason I would recommend the Use of this excellent Dung in the following Manner, *viz.*

When a new Hedge is planted with Quicksets of Thorn, Sallow, Holly, &c. they are, with us, laid in the Bank somewhat horizontally, with a small Ascent with their Headpart, that the Water may the better descend to their Roots, by which Means the Top or Surface of the Bank is bare, and left roundish ; now here is Room for a Quantity of such Hog-Dung to be laid on the Ridge of the Bank, all the Way it extends itself, which by the succeeding Rains will gradually wash down upon the Roots of the new-planted Sets, or the Roots of any Fruit-Trees that may be planted therein, and there administer such a Fertility as to cause such Sets and Trees to grow as fast again as they would otherwise do, if they had no such Application : By this Means also the Sun's Heat is kept off from drying and scorching the young Roots both of the Sets and Trees, which often is destructive to such Undertakings : So also are the Frosts hindered from killing them, that sometimes are fata

to them. Now, it may be objected by some, That this is a great Charge and Trouble to bestow their Dung this Way, when they have a hundred other Calls for it in their Fields. To this I answer, That there is not an absolute Necessity for this Trouble and Charge above one Year, or once well-doing of it; because when the Roots have taken the Ground, they will be strong enough of themselves to resist the Extremities of Weather; nor will the Charge be much, by Reason one Cart-Load of short Hogs-Dung will be sufficient to cover five or six Poles of such a Bank.

The Roots of old Hedges generally extend themselves several Yards from their principal Stakes, as will the Roots of Fruit-Trees, if planted at some Distance in such a Hedge, according to the common Rule, which is forty Feet asunder, and these are all govern'd in their Growth, according to the Goodness or Badness of the Soil; therefore I would advise all Persons that are Masters of such Hedges and Tree Roots, to give them a Dressing of this, or other Dung, on the Surface of their Extension, and then they may depend on it, they will have a profitable and quick Return of Wood and Fruit. This is such a Piece of Husbandry, that, in my Opinion, there is hardly any Thing exceeds it in Farming, because your Fence will be the sooner in Service, and out of the Cattle's Reach.

Reach. But to be more particular, I will tell you the Practice of one of the best Farmers in our Country, and that is, presently after he has sown his Wheat or Barley, he takes a Number of

C O W-H O O F S.

These he sticks in the Ground about a Foot asunder, with their broad Ends upright, by first making a Hole with a Piece of Iron or Wood, and that commonly from the very Hedge, if the ploughed Ground reaches to it, and thus it may be planted an Acre or two, or more together. Now by planting these Hoofs upright in the Ground, they are capable of receiving and holding the Rain-Water that falls into them, which, in Time, will corrupt, putrify, run over, and water all the Ground between the Hoofs, so that the Roots of the Trees and Hedges, as well as the Corn, will have the Benefit of it, and such a one as will cause all of them to grow excessive fast, and is what all Farmers ought to observe, that can come by such a durable and most valuable Manure.

M U D.

Mud taken out of Ditches or Bogs, will mend all Sorts of light Grounds, and bring

them into a proper Consistence to plant Trees in ; but such a Mixture ought to have a sufficient Time allowed it to be digested in a Heap by the Sun and Air, which will the sooner be done, if turned now and then. In low, moist, or wet Grounds, apply a Composition of one Load of human Ordure grown stale, whereof the Strength is gone, seven Bushels of Lime, one Load of Clay, and two of Cow-Dung ; Mix these together very well, and let them lie on a Heap, for a Quarter of a Year, to rot, then turn it, and so let it lie till you have Occasion to use it ; and there dig a Hole according to the Bigness of the Tree you will plant, and fill it up with the same Ground, so that the Roots are all envelop'd in this Mixture ; then cover all with common, or rather with Virgin Mould, and you need not doubt but your Tree will be fruitful, and never be overgrown with Moss, which is generally the Misfortune of all low, wettish Grounds, provided the Rules already laid down in this Book be duly observed.

U R I N E S,

Are all, in general, of a fiery Quality, and afford a great deal of that Principle which all Farmers and Planters ought to endeavour after, as the most fertile Assister for all Trees,
Shrubs,

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Shrubs, and Grain; and here it is in a great Measure to be met with and enjoy'd, provided a due Care is used with it, for else it will do more Harm than Good, it being so efficacious on all Corn, Grass, and Tree-Roots, that one single Dressing or Sprinkling of old Piss in the Spring-Time, is sufficient to bring forward their Growth for that Summer, as I have several Times experienc'd; and though it may burn or scorch the Grass, or Corn-Blades, for a little Time after it is used, yet will they recover and come to their former Verdure in a Week or two's Time.

Of the H O P.

This most useful Vegetable has perhaps been the most abus'd of any other, both in its Use and Character, by the ignorant Person, who not knowing its fine Virtues and true Management, has mist enjoying a most pure Ingredient; for it is certain the Hop (like many other Vegetables) has its good and bad Properties: Good, I say, when its spirituous, flowery, healthy Part is obtain'd free of the earthy, unwholsome, phlegmatick Part, which may easily be done in all Manner of Brewings, if Skill and Care be employed in the same: But as that Matter is somewhat foreign to my present Purpose, I shall now wave that Particular, and observe, That it's

my real Opinion, and that for very good Reasons that I could assign, the Hop will be in greater Reputation than ever, when its extraordinary Virtues are more known, and consequently a third Part or more consumed than at present they are : And therefore, I would advise all Persons that are in a Capacity, to make Plantations as fast as they can, and the sooner they do it, the sooner will they come by the Profit that will arise by a new Method of consuming them in Malt Liquors, that will be speedily published.

It is a most hardy Plant, agreeing with Clays, Loams, Gravels, &c. but in Sands and Chalks, &c. they will not answer so well. They will prosper almost in all Climes where the Soil is fit for them ; and when they have got Footing in the Ground, there is hardly any destroying them, as I have seen experienc'd by a Person that would have clear'd a few Yards of them, where they grew in a wrong Part of the Garden ; but he could not, without digging farther into the Ground than he was willing. However, the Hop, like most other Vegetables, requires a Soil that must actually be well-dress'd with rotten Dung, rotten Turf, Bottom of Ponds, Wood-Earth, Virgin-Mould, Lime-Ashes, Sea-Sand, Marle, &c. for without this Husbandry they will degenerate ; therefore if the Undertaking is great, the Purse should be so likewise. They will not enjoy a full Crop
of

of them till the second or third Year, and then there may be a thousand Pounds Weight on an Acre, which is reckoned but a middling Crop: An Acre will cost about twenty Pounds planting, poling, and looking-after; and then if a Blight does not happen, it may return thirty or forty Pounds, in one Year, clear Profit. Sallow, Poplar, Alder, Willow, Chesnut and Ash, are proper Poles, that are worth above twelve Shillings *per* Hundred with us, if they are three or four Inches Diameter and twelve Feet long, and may be raised in ten Years Time for Use, the first Time; but afterwards they may be cut in less Time.

A dry Soil and open Situation to the South-East and South-West Points agree best with Hops, if they are defended with Trees planted on the East, North, and West Sides, and likewise planted in a good Tilth and rich Mould, by Lines throughout the Ground you plant, with Knots or Rags tied at eight Feet Distance, to direct where a Stick must be put in for the Making of the Hills either in square or quincunx Forms. Then in *February, March, or April*, the Hop-Sets of seven or eight Inches long may be planted, and their Roots carefully bedded, leaving three or four Joints out: Or Cuttings or Shoots from the Roots will grow at this Time of Year, and so they will, if cut when the Hop is gathered, and directly put into
good

good Earth to be re-planted in *March* following, and become a good Set. To plant the Set, raise a Hill of about fourteen Inches over, and with a Dibber plant five or six Sets in each Hill, and cover them two or three Inches with good Mould, that may encourage them to make Sap-Roots speedily. In the Summer keep all Weeds, between, clear with the Hoe, and about *June* twist them together, and let them lie, that they maynt bear the first Year; to make good which Time, Garden-Beans may be set between the Hills, and about *November* plough and dig the Interspaces, and dung an Acre with forty Loads, cutting the Hop-Vines down to the Earth, and cover with fat Mould, that the Frosts hurt them not. About the First of *March* the second Year, open the Hills, and cut away all new Suckers; then pole them with twelve-feet Poles; the third Year they are in full Perfection, and will last about twenty Years; and now they must have Poles of twenty Feet long, three to a Hill, but dont pole till the Shoots are ten Inches high, which generally is about the Middle of *April*, making first a Hole with an Iron Crow to put the Poles in, that must be cut three-square at their Ends. When the Vines are three Feet, and all are not taken to the Poles, guide the rest to them. Dry Times are often Impediments to the Hop, which to supply, some are at a great Expence and Trouble

Trouble to water each Hill ; but I will tell you how to avoid it. When you make your Hill, put in, about the Middle of it, either Fern or Horse-Litter, and cover it with Mould in the Shape of a Bason, and never water the whole Summer ; this will do by retaining the Wets, and so save watering six hundred and eighty *Hills that an Acre contains at eight Feet Distance.* If planted square, at six Feet Distance, then twelve Hundred on an Acre is the usual Quantity. The quincunx Order, at six Feet Distance, is fourteen hundred Hills. If the green Lice or Fly annoys the Hop, use the *Dutch Squirt*, and it may chance to give you Hops when your Neighbours have none. About the Beginning of *September* your Hops will be ripe, known by their brown Colour ; then cut the Vines three Feet from the Ground, and pull up the Poles, which carry to the Bin and pick them ; twist the remaining Vines together ; three Acres will employ five Bins or Frames. Pull the Hops a little before they are ripe, that they mayn't lose their Seed, and put them on the Kilns as soon as possible, and dry on the Hair-Cloth ; when the Hops are brittle, they are dried enough, which commonly is in two or three Hours ; Charcoal or Coak is generally used to dry with ; they must not be turned on the Kilns while they sweat, but check the Fire first and then turn, and when dried enough, let them

them lie to sweat in Heaps two or three Days; and then they will be fit for Bagging, for Hops will break to Powder, if bagg'd directly from the Kilns. They are to be bagg'd by a Man's treading them in. The Poles may be stack'd all Winter in an upright, or leaning Heap, about three Hundred together. Ash-Poles will last seven Years, Chesnut longer; but if Yew-Poles could be had, they would out-last all others. If Sets of Hops are to be brought from some Distance, soap their Roots, and it will preserve them, and save the Trouble and Charge of packing them in Sand and Mould. There is an Instrument call'd a Dog, that if applied right, will take up the Poles easily.

At this Time, I have some Hops growing in a red Clay, where they have been these twenty Years, and yet bear very well; which proves that this Vegetable affects a stiff Soil better than a light one, for in this they will flourish, and continue longer than in light and loose Earths, because these emit their Salts free and quick to the Vegetables that grow in it, and therefore such Earths sooner lose their Fertility; when the stiff Sorts emit them more slowly, and supply a greater Moisture to the Roots than the dry and loose Sorts can. Besides, in all stiff Soils, Dungs and Manures will remain longer than in the more dry and loose ones, because the latter are more voracious and hungry, and are sooner ex-

exhausted than stiff Earths; and therefore it is, that all Dressings should be proportion'd both in Quantity and Quality to their particular Soils; as for Example, Horn-Shavings, Coney-Clippings, and long Dungs, are proper for Sands, Chalks, and Gravels: But for stiff Clays, or Loams, Soot, Ashes, Sea-Sand and short Horse-Dung are most proper. The Top of Hops are excellent Eating, if gathered about *Lady-Day*, or the Beginning of *April*, and boiled in Bunches tied up like Asparagus; and, I am of Opinion, are much wholesomer. The Criterion to know how much is good of their Tops, is discovered by their breaking short off when they are bent at their lowest brittle Part, that is commonly about a Foot from the Top-Bud, and so far they are useful, and no farther; and these may be gathered where their Shoots are too numerous, without prejudicing the Hop, and will rather strengthen, than weaken, the remaining Shoots.

The general expeditious Way of drying Hops, is by the Kiln, which extract their Humidity in a little Time; but then such Violence is not so natural as the Heat of the Sun, that is the best of all other Ways, where Conveniency will allow its being enjoy'd in drying of Hops; for the spirituous Parts of this Plant are so nice, that it cannot endure any violent Heat without Prejudice to its fine Virtues, that are of a friendly, opening Quality,

lity, when its aromattick, subtle Spirits are thus mostly kept in, and then they naturally, powerfully purge by Urine, and are a special Remedy against the Stone, although by many of the Ignorant, they are unjustly charged with breeding it. Indeed, when this noble Vegetable, the Hop, is abused, and after their good Virtues are drawn off, or evaporated by the Force of Fire, as Boiling, or the like, which is done in a Trice ; for no Herbs that have been dried as they ought, will endure the Fire or Boiling, without manifest Prejudice to their best Virtues, which is the Reason that the *Plymouth* People eat their Herbs chopt small, and put into their Broth after it is in the Porringer : Then, I say, the contrary ill Qualities may be expected to bring on and produce Gravel, Stone, and other evil Effects. But to have the true Benefit of the Hop, it is a gentle Infusion that will naturally, and without Violence to Nature, extract or draw forth all that is desired in Hops, or any dried or prepared Herbs. The further Particulars of this Management in Brewing, see in the *London and Country Brewer*, published by an experinced Hand ; a Book far exceeding all others for its ample Accounts of the several Methods of brewing Malt Liquors, &c. and is truly necessary for all Persons whatsoever, concerned both in publick and private Brewings, and also all Drinkers of Malt Liquor.

I sowed

I sowed in *October* some foreign Wheat, that was given me by a Member of the Royal Society, on an hungry, gravelly Soil, in a Land by itself, exclusive of any Mixture of the *English* Wheat that grows in the same Field, and found it to carry a different-colour'd Green, compared to the *English* Sort, grew up with strong Stalks that produced naked Ears about the 9th of *May*, which were then three Feet high and better; but these Ears, to my Surprise, come out bearded, like Barley or Dugdale Wheat, which is a good Property, because they defend the Ear from Blights, which entitles many to Crops of the Dugdale Sort, when others miss, and is such a Resister of Cold, that it is now much sown in *Lancashire*, and other Northern Parts, and would be more propagated in the Southern Parts, were it not for its Coarseness. Again, I observe, that in the same Field I sowed *English* Wheat a Month almost before I sowed this foreign Sort, and yet the latter shot out sooner than the former by a Month.—All which Difference gives me great Hopes I shall be Master of what has been so long wanted, *viz.* a Wheat that will endure late Sowing, and yet be sooner ripe than any of our *English* Wheats, and then we shall be as happy in this Grain, as we are in the rath-ripe or forward Barley, and obtain the great Conveniency of having a Wheat-Crop after our Turnips, instead of
a Barley

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a Barley Crop, which though now practised by some, yet is it with great Uncertainty Hazards; and particularly the Wheats, being liable to Blights, occasioned by Honey-Dews, &c. that happen in *June* and *July*, and are often fatal to the late-ripe Wheats, by Reason their Ears being then greenish, these Dews, by their glutinous Natures, have the more Power to lock up and close their Parts, so that they can't enlarge their Bodies, and then the Produce will be only a lean, thin Corn, oftentimes of about Half the Substance of the old Lammis Sort.—In *May* following, I had also a Present made me by the same Person of a foreign Barley, that is partly like Wheat, and partly Barley, of a larger Body something than our *English* Sort, and is said to produce almost double the Quantity of Drink, when malted, than any Barley that grows in *England*. This foreign Barley I put into my Ground in a Garden, and covered it with Nets; but as there was but Half a Handful sown, the Birds were so voracious after it, that they got under the Nets, and destroyed most of it, so that I had hardly thirty Corns left, which I have since put into the Ground for another Trial. My Friend also had the Misfortune to lose his entirely, by the Mistake of one of his Weeders, who, while he went into the Country for some Time, cut up the Barley among the Weeds of the Garden. It was first brought out of
Greece

Greece over Land to *Hamburg*, from whence it was brought to *England*. I have also a new Sort of foreign Grass sowed this Summer for a Trial, which, if it answers my Expectation, I shall venture to sow it in common, and publish its Effects: And indeed, it is a great Pity, that Trials are not more made to naturalize Exoticks in our Fields by those whose Abilities are capable of doing it, that our Ground may be more employed in Variety of Corn, Grasses, Fruits, Trees, &c.

The *Indian* Wheat that is in general Use in *Africa*, and many other Parts of the World, and is called Cankee by the Blacks at *Cape-Coast*, might, in my humble Opinion, be still further attempted, than it has been; for if there could be found out something extraordinary to forward its Growth, so as to bring it to Maturity before the short Days are too far advanced, I am in Hopes it may be effected, and as a Well-wisher of such Success, I intend to make a Trial the next Opportunity of a Season, and if I miss, it shall only be in a small Attempt at first, and not in a random, extraordinary Charge, which then would justly impeach my Discretion; for though I have as great a Passion for the Vegetable as most, yet, I think, it does not become me, nor any other Person, to venture too much at first, lest the Difference of Soil, Management, Mistakes, or other Incidents, cause an unforeseen Miscarriage.

General Observations on a late Wet-Summer.

It caused the Vale-Crops in general to be so big, as to be laid flat, and that before the Wheat and Barley were full kernalled, which made these Grains to be lean and half-bodied, by hindering a free Ascent of the Sap to the Ear. The Horse-Beans also grew so high, as caused a greater Drip of Rain than usual to fall on their Under-Blossoms, that could not dry soon enough to prevent the Damage the Wets occasioned by Reason of their great Cover, and so became a very indifferent Crop; their Oats, Pease and Tills had the same Fate: Nor did we in the Chiltern altogether escape a Share in the Misfortune, for there were many of our Hill-Country Farmers had their Wheat, Barley, and Pease laid in some Parts of their Fields, but not like the Vales: I had Barley fell down in *May*, by the Violence of Rains, and the Strength of Winds, in two of my Fields, but not so much as to hinder its being a vast Crop, and allowed by our Farmers to be the best in the Parish. Our Grass was very great, and we had a very good Time to mow it about the First of *July*, which is commonly the Time our Hay is got off our cold, clayey, hilly Ground at *Gaddestden*; but our Black-Cherries received what we call a Blight, by the
Colds

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Colds and Wets, that caused a great Fall of them about a Fortnight before *Midsummer*. Our Woods and Hedges grew extremely fast this Summer. The Fruits of Apples and Pears were plenty. But the greatest Quantity of Beech-Mast hung on the Trees that ever was known in the Memory of the oldest Men. About this Time, Wheat rose, by the Apprehensions of a short Crop, and the great Call there was abroad for it. The Kernels seemed to suffer by an indifferent Blooming-Time, that its two Enemies were the Cause of, the Wets and Flies: In short, the bad Husbandman had the best of it this Summer in many Places, for the poor Grounds were loaded with plentiful Crops by the great Feed the Rains gave them: However, as these unforeseen Incidents of Weather seldom happen, it was no Fault on the industrious Farmer's Side; and if the Chiltern Farmer had the best of it this Year, the Vale Men have the Advantage of greater Crops four to one, at least, other Times. And what was very particular, their Sheep escaped a general Rot, which, in wet Springs or Summers, they commonly are overtaken with; but this Time there were but few that died, and that was by the red Water, and Cholick or Gripes, that the flashy Nature of the wet Grasses occasioned; though both them and we were upon the Edge of suffering, had not the Rains in a great Measure ceas'd, which it did for some

Days at Times ; and it was these Intervals of fine Weather, in my Opinion, that sav'd us from the Rot. However, on the Loss of two of my Sheep the Beginning of *June*, I gave the rest two Spoonfuls a-piece of my Sheep-drink, two or three Times, and they did not complain all the Summer after. Any Person that pleases shall be welcome to view my Proceedings in Farming, after the several Methods that are publish'd in my Books, and be satisfy'd of the same by ocular Demonstration, and the Declaration of the Neighbourhood, particularly of the great Efficacy of the *French* Wheat that this Summer I ploughed in, in three several Fields, and other Ways of cheap Manuring ; for where these and other Dressings may be had cheap, it would be very absurd Management of any to let the Ground want Assistance, according to those plain Directions that I have published, which, if duly regarded, by the Blessing of God, no Person need fear a good Crop on the Ground, and that oftner than by the common Way, of making a Fallow every third Summer : But then there must be a careful Observation of the Times and Seasons of the Year, which I found of so great Importance, that for these seven Years past, I have been making Collections and Experiments, and wrote the Success and Loss of several Farmers Proceedings in our Country, as well as my own, for let a Person be ever so good a Husbandman in the
operative

operative Part, yet if he does not know how to Time his Matters, he may likewise lose his Money and Labour too; for Example, Chalk or sandy Grounds require different Times of Sowing than what Clay or Loams do; so likewise wet Grounds want not only different Dressings than the dry Soils, but also Times accordingly to lay them on; in Ploughings the same, Planting the same, and in Seeds the same: For if a tender Maple-Pea was sown in *January*, it's Odds if the Crop is not lost, when the hardy Horn Grey-Peas may be spoiled by Sowing in *April*; and so in many other Things used by the Farmer.



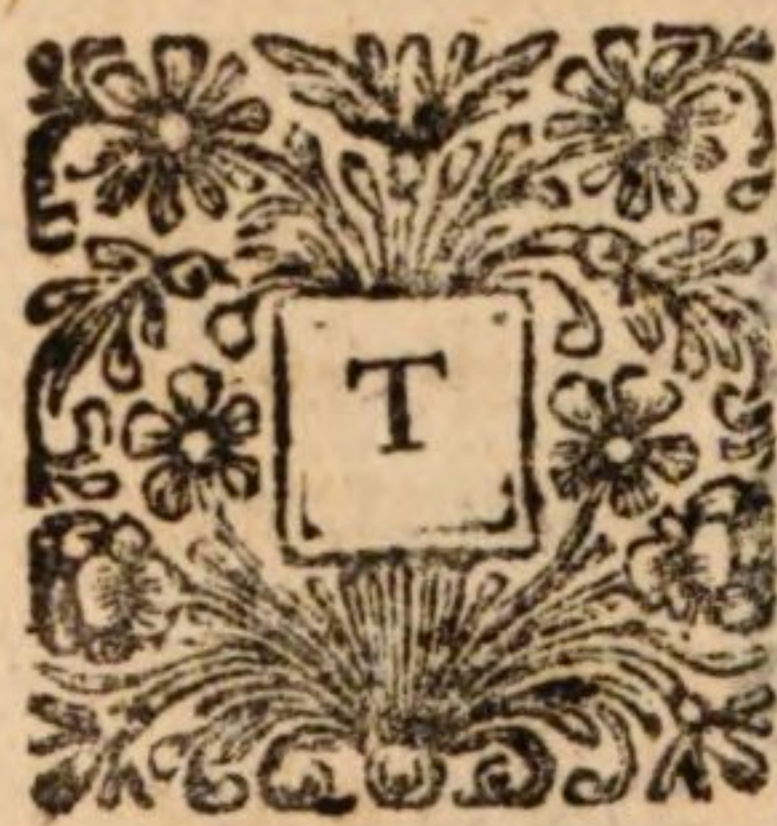


A
COMPARISON

O F
Different Methods of FARMING

I N

SEVERAL COUNTRIES.



THE County of *Hertford* is allowed by the exactest Observators to be a most healthful Situation, abounding with red Clays, Loams, Chalks, Gravels, and Sands, that lie in many Hills, and a few Valleys, which are most of them naturally poor Soils of themselves, but of late greatly improved by the Industry of its Farmers, who living within a Day's Journey of *London*, many of them have been encouraged

couraged to employ their Teams at vacant Times to carry Meal, Bran, Chaff, Corn, Wood, and other Vendables thither, in order to load back again with Soot, Ashes, Hoofs, Horn-Shavings, Rags, &c. for dressing their Land, and by the Help of these and good Ploughing, many have the Benefit of Grain, Grass, Turnips, &c. yearly, without the Loss of one Summer for the fallow Season; which of late has become so profitable, that our Chiltern Farms let for more than the Vale Grounds, that are in themselves richer than the hilly Lands, being a black Mould mixed with a bluish Clay, that will, with half the Dressing of ours, return the most plentiful Crops of Wheat, Barley, and Beans: But then there is this Difference, we in the Hill Country have sometimes three Crops in less than a Year and an Half; as Clover, Turnips, Wheat, or Barley; or else Peas, Turnips, Wheat, or Barley, &c. by Means of our convenient Inclosures; whilst they in their valey, open Fields are confin'd to lose a Year and an Half before they must set on a Barley Crop after their Beans. For which Reason it is, that we commonly reckon a Wheat or Barley-Crop ought to pay two Years Rent. However, with these Inconveniences, they have several balancing Advantages, as having their Land cheaper than in the Chiltern; for

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tho' the Vale of *Aylesbury* begins but four Miles distant from *Gaddeſden*, yet have they their very beſt Marley-Ground for nine Shillings *per* Acre, while we pay twenty for a much poorer Sort. There alſo the very Smith's Bill will amount only to fix Pounds a Year, when three Times as much with us, will hardly defray the Charge of the ſame Number of Horſes, Waggonſ, Carts, Ploughs, and Harrows. Their Servants are alſo hired cheaper, and generally fare harder ; but then they are at a Loſs for Clover, and other artificial Graſſes, Turnips, &c. which few of them can enjoy, becauſe of the Richneſs of their Soil, that will not bear the Cattle's Stolching and treading in them to feed in Winter, nor in wet Summers, beſides the diſagreeable Nature of the low Earth to that of the Turnip, and inſtead of Appling or Bottling, it runs into rank Leaf. This obliges them to feed their Sheep on their Commons and Stubbles altogether, with which they very plentifully abound ; inſomuch, that few or none of them ever buy any *London* Dreſſing, tho' ſome of them are but one and thirty Miles off it. One indeed I did know of them purchaſe a Waggon Load of Soot, for his Farm that he rented at one hundred and fixty-five Pounds a Year ; and it answered very well, as he himſelf owned, but I never could hear he went a ſecond Time to

to the same Market: On the contrary, he has been several Times to fetch Pigeons Dung, at ten Pence *per* single Bushel, to sow on his Barley-Ground, out of *Bedfordshire*, tho' he lived sixteen Miles distant in *Buckinghamshire*. Another great Benefit they have in the Vales are the Number of Cows which they keep in abundance, by Reason of their great Quantities of Cow-Pastures, as they call them; that is, where a Cow-Common is, each Farm has a Right to feed a certain Number of them, and if they chuse to let them out, as many do, they seldom want Chaps, by Reason of the Sweetness of their Grass-Turfs, and the extraordinary Heart there is in their Herbage; for its certain, the very Hay off their Marley-Soil will fat a Horse or Ox alone, when ours in the Chiltern will but do the same with Hay and Oats too. Another Convenience they have in the Vale is, That they are not under the Necessity of much Brain-Work to study the Improvement of their Land in their open Fields, because every Farmer acts commonly as his next Neighbour does, and that Year after Year in one and the same Sort of Management. For if they would do otherwise, they are hindered by the Want of Inclosure: So that in the open Vale-Ground, the Science of Farming is as easy and plain, as it is hard and difficult in the Chiltern, where an acute Farmer is obliged to form a Plan of
his

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his future Proceedings three Years at least before-hand, that each Crop may succeed one another in such Order as to impoverish the Ground as little as possible; not but both Vales and Chilterns vary much in many Places, in the several Ways of Husbandry.

In the Vale of *Aylesbury*, one Part of it fallows their Ground every third Year; another; every fourth Year: Some drill their Horse-Beans in; others sow them broadcast, and plough them in. Some plough up their Sward or Grass-Ground, and sow Wheat, which they sell at an extraordinary Price, as coming off fresh Earth, or Virgin-Mould; and after fifteen or twenty Years Tillage, they lay it down again for Grass-Ground; and so continue this Practice in several Parts of the Farms alternately, especially in *Buckinghamshire* and about *Buckingham*; and which is of so great Service to us Chiltern Farmers, that it tempts some of us often to go down with our Waggon to *Aylesbury*, to buy this fine Seed, as well for the Sake of the Change of Ground, as for being clean of Seeds, Weeds, and other Trumpery. And of this Sort I sow myself and have had very good Success. Yet in some other Parts of the Vale they have no Notion of this Improvement, tho' they have the same Opportunity.

In

In *Berkshire*, in some Places, they cut up their Turf or Peat, and burn it to Ashes to dress their Ground with. Here they drill and hough their Hog-Peas. Some again follow the ingenious Mr. *Tull's* Way of drilling in Wheat, and other Grain and Grass-Seeds, in order to sow the Interspaces the next Year, that lay vacant the preceding; which I think to be a good Way, if the Charge of Houghing could be avoided; but that is such an expensive Article, as will not suit with the Farmer's Mind nor Pocket. The Method also of drilling in Horse-Beans at six Feet Distance has been practised, and the Houghing-Part supply'd by the Plough; but the Attempt proved unsuccessful, because as they manag'd it, the Weeds came up and choak'd the Beans; not but that I believe it might answer, if a proper Method was made use of.

In *Cornwall*, *Devonshire*, and several other Maritime Countries, they dress with Sea-Sand, Oar-Weed, Sea-Mud or Vaes, Shells, and sometimes Fish, as I knew it once done in *Cornwall*, where there were such Numbers of Pilchards affrighted to the Shore near *Mount Edgcumb* by the Porpoises, that several laid them on their Lands, and afforded a great Improvement by the oily, sulphureous
Parts

Parts of the Fish. So in *Cambridgeshire*, *Bedfordshire*, &c. several make use of Rape-Canes, ground at the Oil-Mills near *Cambridge* into Powder, which does great Service to Land.—Likewise in *Berkshire*, and the Chiltern Part of *Buckinghamshire*, several sow them for their Cattle.—In *Essex*, and several other Countries, they send ten or twelve Miles, or more, for Lime to manure their Ground with ; as they do in *Hertfordshire* with Chalk, Rags, Horn-Shavings, Sheeps-Trotters, Hoofs, Hair, Ashes, and Soot. In *Surrey*, *Suffolk*, and many more Places, the Marle-Pits excel as well as others that dress their Clays with Sand, and Sand with Clays. The Marles in *Warwickshire* and *Northamptonshire* are of two Colours, red and blue ; the red is as hard as an Earth-Floor, which obliges them to dig it out of Pits with Mattocks and Crows of Iron ; from thence they lay it in Heaps in their Fields, and in three or four Nights Time, its small Pieces and Bits will shoal by the Help of the Dews and Rains in *August* and *September*. The blue Sort being softer, is much easier manag'd.—In *Surrey* and *Berkshire* their French Wheat is a great Improvement, by being ploughed in to dress their Ground. About *Harrow* in *Middlesex*, several do the same by their Clover, which is reckoned but half

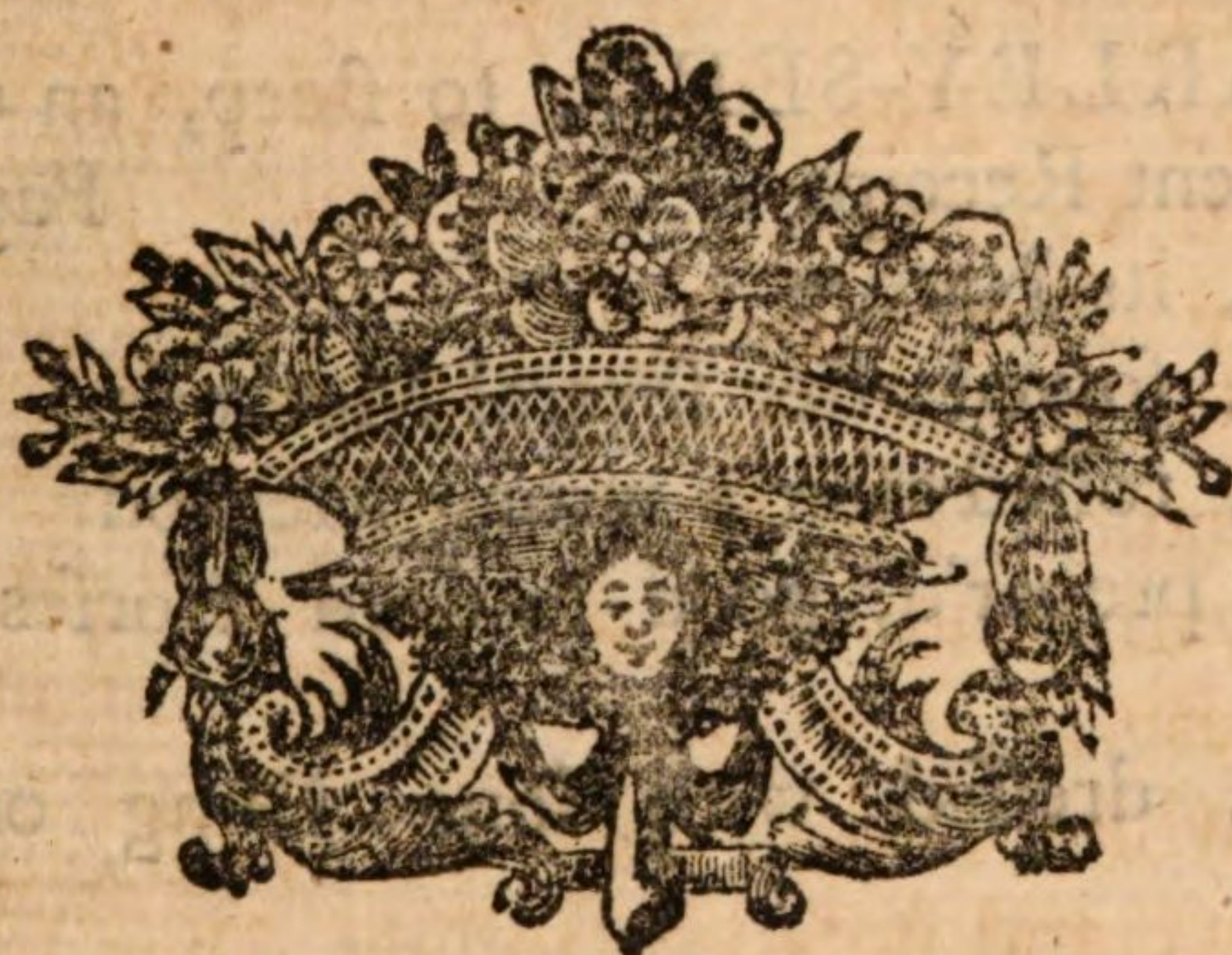
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half Dressing in Comparison of *French*
Wheat.

In the Vales, their Way of cleaning Wheat, and other Grains, is very different from ours in the Chiltern: The former follow their ancient Way of wind-fanning it; the latter, by throwing it with as much Expedition as they, and fewer Hands.—Their Hedging in the Low Countries varies much from that of the High Lands. In *Bucks*, *Bedford*, and many more Places, they cut Half the Side of the Hedge for Fuel, and leave the other Half for a Fence: But in *Hertfordshire*, *Kent*, and some others, they plaish all that is to be left, and make a Sort of a Wall-Hedge about four Feet high from the Ground, far exceeding all other Ways.—In the Vales their Wheat and Beans are larger body'd than ours in the Chiltern, by Reason of their excellent, strong, black Soils; but their Oats and Barley are not so good, because their Ground is so rank as runs them mostly into Straw, and less into Corn, that often lays them flat to the Ground by the Greatness of their Bulk, and then it's generally lean Corn.—In *Kent*, their Ploughs that have two broad Boards, are excellently well adapted to the Culture of their hilly Grounds, because they turn a Thorough or Furrow all one Way, and thereby leave no Bendings, as
the

the Wheel *Hertfordshire* Plough does; which renders them very useful in turning the Ground from the lower Part towards the upper Part; and for this Reason it is, that they call ours a Bastard Plough. But our new-invented double Plough answers extraordinary well, especially in Barley and Turnip-Ground, and in sterile Seasons; for then there may almost double Work be done with four Horses in Half the Time that a single Plough is employed; and thus to save Time and Labour in those Seasons where the Farmer's great Benefit lies in Expedition, must certainly be of great Value.—In the Vales, they are in many Places under the direful Misfortune of having rotten Sheep, by their watery Situation, and loose, sticky Earth, that easily washes about the Grass, and communicates a poisonous Quality into the Blood, which sweeps away many Thousands in a Year; and notwithstanding what I have said in this, and my aforesaid Book, I have Reason to suspect, that the common, obstinate Farmer will not adhere to my excellent Receipts that have by some been tried, and found to do Wonders in this Respect, by saving many that have but been just touch'd with the Rot. And they may believe me, if they please, that a Member
of

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of Parliament who lives in the *West* assured me, he tried one of my Receipts, and found it answer, by preventing his Sheep that were in great Danger of being destroyed by the Rot; and not only in the Rot, but also to prevent and cure the Red-Water, that kills many in the Year in the hilly Countries, as well as the Vale.



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By WILLIAM ELLIS, a Farmer at Little
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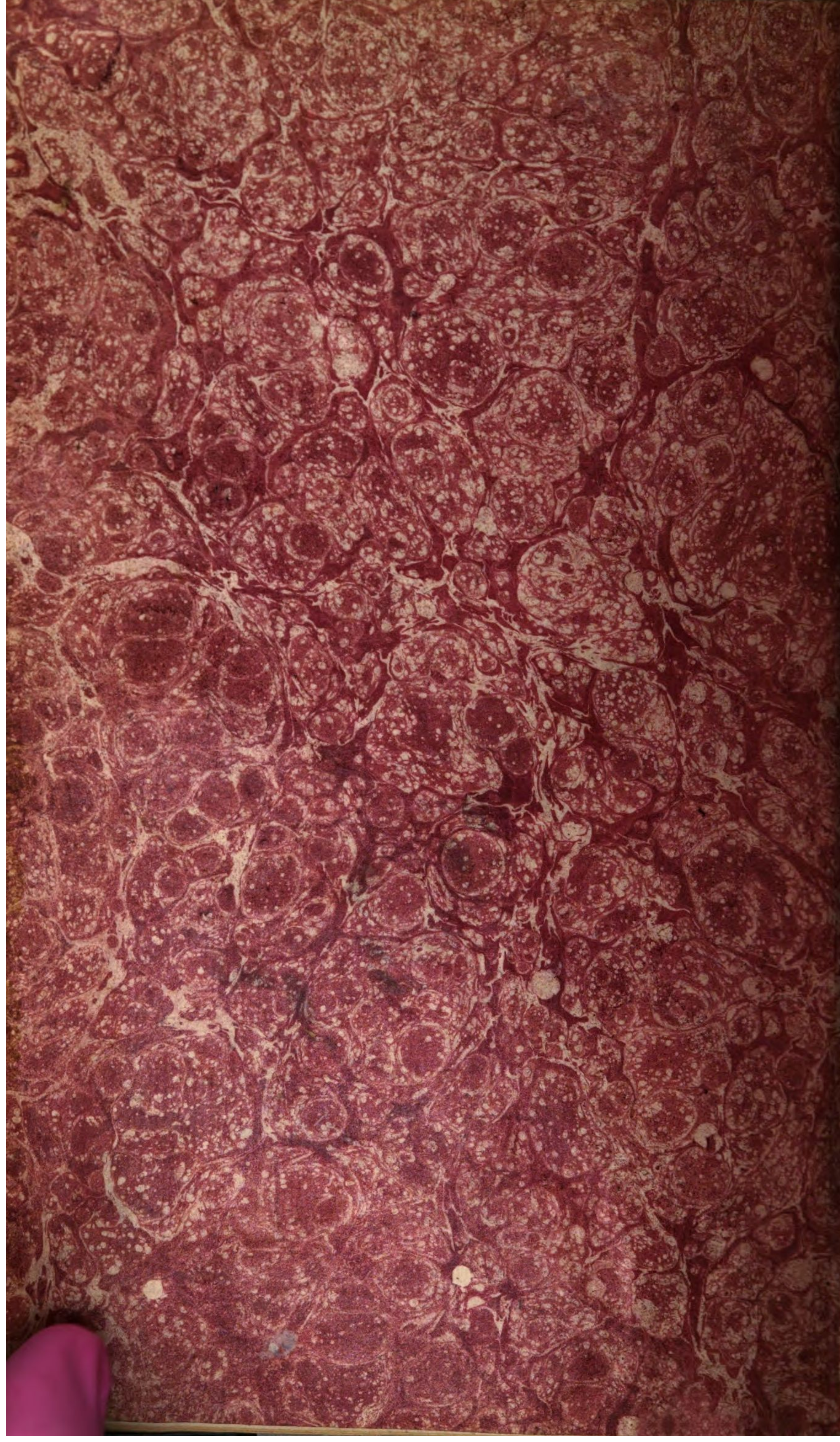
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